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**A HISTORY OF THE WHITEHORSE COPPER BELT**

**By**

**Helene Dobrowolsky and Rob Ingram  
Midnight Arts**

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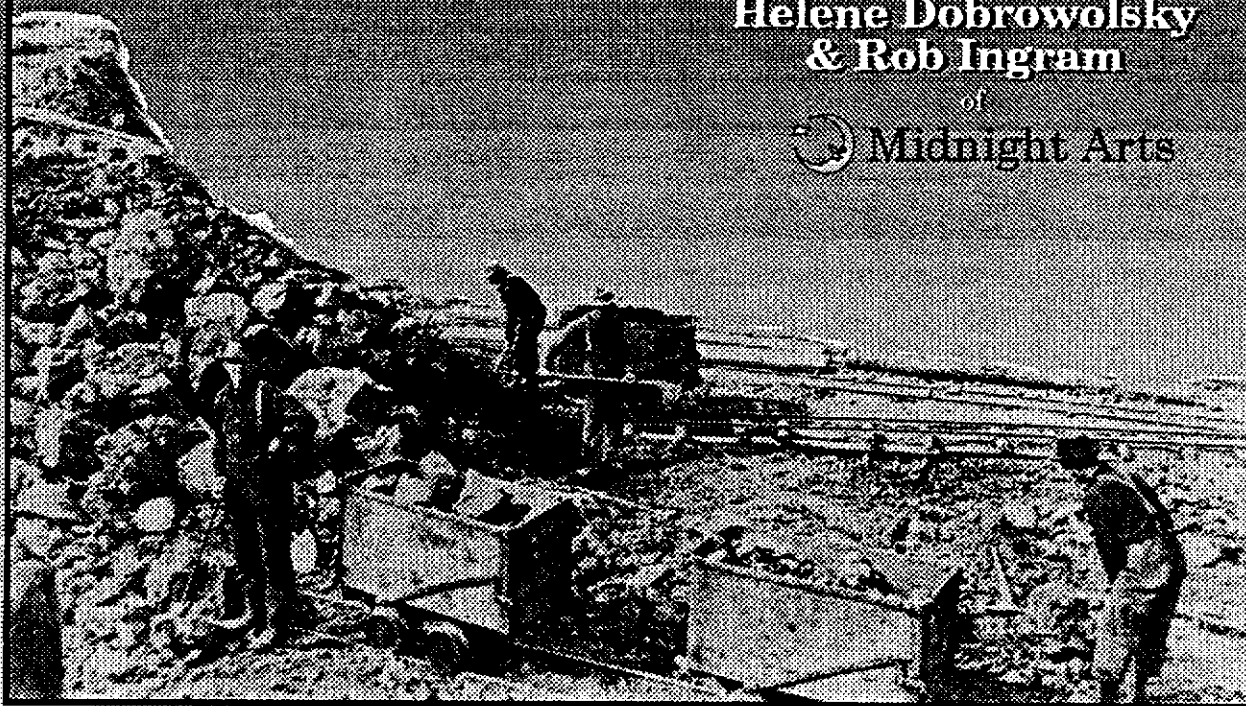
**A History of the Whitehorse**

# **COPPER BELLS**

**Helene Dobrowolsky  
& Rob Ingram**

of

 **Midnight Arts**



prepared for

**MacBride Museum**

April 1993

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## Table of Contents

Abstract .....	1
<b>I. THE EARLY PERIOD: 1898-1920</b>	
Introduction - First Claims & Great Hopes .....	2
Table Showing Major Discovery Claims .....	3
The First Showings & Early Development .....	4
Speculation & Transportation .....	4
Booms & Busts .....	6
The Copper Belt Mines & Whitehorse .....	9
Working Conditions, Accidents and Disasters .....	10
<i>The Pueblo Mine Disaster</i> .....	11
Personalities: The Early Years .....	12
<b>II. THE FALLOW PERIOD: 1921-1961</b>	
Introduction .....	16
The Richmond Yukon Company .....	16
Noranda Mines .....	17
Hudson's Bay Exploration and Development Company .....	17
Imperial Mines and Metals .....	17
<b>III. INVESTMENT AND PRODUCTION: 1962 - 1982</b>	
Introduction .....	18
Exploration & Expansion, 1962-63 .....	18
Building a Mine, 1964 -1966 .....	19
Open Pit Operations .....	20
<i>Transportation</i> .....	20
Reorganization & Moving Underground .....	21
<i>Transportation</i> .....	22
Working Conditions & Labour Relations	
<i>The Mine and the Union</i> .....	22
<i>Working Conditions</i> .....	23
<i>Aboriginal and Women Workers</i> .....	23
<i>Mine Safety</i> .....	23
<i>Looking Back</i> .....	24
Recession & Closure .....	24
Whitehorse Copper & the Community .....	25
Personalities: The Later Years .....	27
<b>IV. THE AFTERMATH</b> .....	30
<b>APPENDICES:</b>	
Acknowledgments	
Illustrations	
References	

## List of Illustrations

### Abbreviations:

YA — Yukon Archives

MM — MacBride Museum

### Fig. #      Caption

1.      Early plan of the copper belt and major claims in relation to Whitehorse.  
(*from: Plat of Whitehorse, ca. 1900; source: YRG I, Series 1, vol. 13, f. 2788.*)
2.      The open pit, Pueblo Mine, 1913.  
(*YA/MM Coll., 83/08, #11.*)
3.      White Pass and Yukon Railway ore cars at the Pueblo Mine, ca. 1912.  
(*YA/MM Coll., 83/08, #5.*)
4.      Mine manager's house at the Pueblo Mine, ca. 1920s.  
(*YA 5661/MM Coll.*)
5.      "The three miners who were entombed in the Pueblo Mine near Whitehorse. They were underground 86 hours while a tunnel 81 feet long was driven through the solid rock. Photo taken at Whitehorse hospital...April 1st, 1917." (*YA/MM Coll., 83/08, #16.*)
6.      Enjoying a game of cards in a cabin, possibly at the Grafton Mine, 14 May 1922. L-R: Lillian Harbottle, Jan Vinal, Claude Tidd & ?.  
(*YA 7204/Tidd Coll.*)
7.      New Imperial Mines fine ore bin and mill under construction, 1966.  
(*YA/Whitehorse Star, 82/563.*)
8.      New Imperial Mines Ltd. Mine Location Plan.  
(*from New Imperial Mines Ltd., 1970 Annual Report.*)
9.      Copper concentrate being sealed in White Pass containers.  
(*YA/Whitehorse Star, 82/563.*)
10.     Janeane MacGillivray with "Number 68", a long hole or ring drill used in production drilling. (*J. MacGillivray photograph.*)

## A HISTORY OF THE WHITEHORSE COPPER BELT

### Abstract

The magnitude of the Klondike Gold Rush overshadowed the intense flurry of mining activity in the Whitehorse area during the same period. While the mines and miners of the Whitehorse Copper Belt did not generate the great wealth and colourful stories of the goldfields; they are, nonetheless, significant in Yukon history and a key factor in the growth of Whitehorse.

In the first three decades of this century, \$2,712,000 worth of copper ore came out of the copper belt (Johnston, 1975). The mines were only active, however, when copper prices were high. Ultimately, the drop in copper prices after the first World War, the discontinuous nature of the copper deposits, and the high cost of transport brought an end to production in the copper belt for half a century.

In the 1960s and 1970s, modern mining technology made it profitable to mine copper ore on a large scale, an undertaking that had proven uneconomical in the early days. Nonetheless, New Imperial Mines Ltd., later Whitehorse Copper Mines Ltd., had much in common with those early mines. Transportation costs were still high, the extent of mining development depended on outside capital investment and world copper prices, and there was still a close connection with the nearby community of Whitehorse.

A companion paper discusses the geology of the area as well as the historic and contemporary mining technology used in the copper mines. This document will address historic events and issues during 85 years of exploration, development and production in the copper belt.

## I. THE EARLY PERIOD: 1898 - 1920

### Introduction - First Claims & Great Hopes

The Whitehorse Copper Belt is situated west of Whitehorse, parallel to the Yukon River valley. Early estimates of the length of the copper belt varied widely and were variously pegged at 8½ (13.7 km), 10 (16 km), 12 (19 km), and 16 (26 km) miles in length or most optimistically, extending all the way to the White River, a distance of some 160 miles or 255 km (Dept Interior, 1902; McConnell; Yukon, 1909; NWMP, 1899; Rickard, 1908). The copper belt is actually 30 km (18.6 mi.) long and extends from just south of the intersection of the South Klondike and Alaska Highways to an area west of the Porter Creek subdivision in the north. (Figure 1 shows an early plan of the copper belt in relation to Whitehorse.)

Northbound prospectors discovered copper here in 1897, but in their anxiety to reach the riches of the Klondike goldfields, they did not pause to stake any properties. It was not until July 6th, 1898, that Jack McIntyre staked the initial claim, the Copper King. Other stakings soon followed. John Hanly staked the Ora, a neighbouring claim, later that same day. On September 15th, Andrew Oleson and William McTaggart staked two adjacent claims, the Little Chief and the Big Chief. Later in the year, W.A. Puckett, a Whitehorse businessman, staked the Anaconda near the north end of the belt.

By 1899, interest had grown in the copper belt and there was much activity in the area. On July 7th, Angus McKinnon staked the Last Chance. A year later, this claim was relocated and rechristened the Best Chance. Also on July 7th, Ole Dickson staked the Rabbit's Foot and H.E. Porter staked the Pueblo. Porter turned over his interest in the property to the Whitehorse Copper Company but left a memento by giving his name to the creek that ran through the property. Captain John Irving staked the Arctic Chief on July 12th and four days later, Sam McGee staked the War Eagle. In August, William Woodney staked the Grafter claim on the 5th and Gustave Gervais staked the Valerie on the 22nd.

Numerous other claims were located during this period. By 1902, nearly 400 claims had been staked in the area (Dickson, H-12, 1902). Trails were constructed from Whitehorse to several of the claims and development work was well underway on the Copper King, Anaconda and Pueblo claims. About 500 claims had been staked on the copper belt by 1905, 200 of which had been worked sufficiently to complete the required assessment work (McConnell, 1909; Coutts, 1980; McGee, 1901-1979, *Daily Evening Star*, 1905).

At the same time, the White Pass and Yukon Railway was building the railroad from Skagway to the present site of downtown Whitehorse, on the west side of the Yukon River just beyond two sets of rapids and Miles Canyon. White Pass purchased a substantial amount of property at the rail terminus for a townsite. By the time the railway was completed in July 1900, the new town was booming. Although much of this activity could be attributed to the town's strategic location at the end of steel and head of Yukon River navigation; there was another



important factor at work, the optimism engendered by the copper claims.

**Table Showing Major Discovery Claims**

Date	Mine	Staker
1898, July 6	<i>Copper King</i>	Jack McIntyre
1898, July 6	<i>Ora</i>	John Hanly
1898, Sept. 15	<i>Little Chief</i>	Andrew Oleson
1898, Sept. 15	<i>Big Chief</i>	Wm. McTaggart
1898	<i>Anaconda</i>	W.A. Puckett
1899, July 7	<i>Last Chance (Best Chance)</i>	Angus McKinnon
1899, July 7	<i>Rabbit's Foot</i>	Ole Dickson
1899, July 7	<i>Pueblo</i>	H.E. Porter
1899, July 12	<i>Arctic Chief</i>	Capt. John Irving
1899, July 16	<i>War Eagle</i>	Sam McGee
1899, August 5	<i>Grafter</i>	Wm. Woodney
1899, August 22	<i>Valerie</i>	Gustave Gervais

The headlines said it all. The *Dawson Daily News* told the world "White Horse Copper — A Railroad Terminal. . . A Population of Nearly Ten Thousand Expected There Next Summer as the Result of the Development of the Rich Copper Ledges Uncovered in that District." When the *Daily Klondike Nugget* heralded the railway opening, its subheads read "Copper Mines Extension — And a Branch Line Will Be Run to Them — Smelters Will Be Built." The content of the articles was no less heady with talk of "fabulous developments" bringing "immense capital and the employment of thousands of men" as well as the modest predictions that the Pueblo would be "one of the greatest mines in the world" while Whitehorse would be "the seat of extensive copper furnaces and reducing works." Local entrepreneurs, many of whom had investments in the copper belt, were quick to expound on the immense possibilities of these properties and their desirability as investments (DDN, 3 April, 2 May 1900; DKN, 6 Aug. 1900).

While hopes and expectations were high, extracting the wealth of the copper belt proved to be very hard work. Once the mineral was wrested from the earth, the miners' problems had only just begun.

## **The First Showings & Early Development**

Early mining was a slow, labour-intensive process. The work was done by hand using shovels, picks, wheelbarrows, hand steels, hammers, buckets, and sticks of dynamite. Initially, only a few operations could afford to install costly steam plants to power drills and pumps. Consequently, most miners tended to concentrate on workings near the surface (figure 2). Sinking a shaft, a timber-lined vertical tunnel, was an expensive and time consuming operation.

Nonetheless, a few miners began eagerly working their properties and the results of the initial development work were promising. The Copper King was not only the first mine to be staked, but also the first mine to be worked. Five men working on the site sunk two shafts, one 18 ft. (5.5 m) deep and the second 24 ft. (7.3 m) deep with a 20 ft. (6 m) drift. In 1900, Jack McIntyre and his partner, William P. Grainger, sent out the first ore shipment from the district. The smelter in Everett, Washington processed nine tons (8 tonnes) of handpicked ore, which proved to have a content of 46.40% copper, 11 ounces (.31 kg) of silver and \$2.58 gold per ton. These encouraging results did much to stimulate interest in further mining work after the excitement of the staking rush had subsided.

The Pueblo, due south of the Copper King, was one of 15 claims bonded to the British American Corporation (BAC). Their development work included one shaft sunk 60 feet (18.3 m), drifts of about 100 feet (30.5 m) and from that level another shaft sunk of about 20 feet (6 m). The latter part of the work was expedited by the steam pumping plant the BAC installed in May 1900. Three tons (2.72 tonnes) of ore from this mine were sent out as a sample.

The War Eagle, Sam McGee's claim, was located about a mile (1.6 km) west of the Pueblo and nine miles from Whitehorse. Three men worked here steadily to accumulate about 50 tons (45.4 tonnes) of ore on the "dump" or stockpile. Development work was also carried out on the Carlisle, the Rabbit's Foot and the Anaconda.

To encourage the development work, the territorial government contributed to the cost of building a new trail from Whitehorse to the copper mines (YS, 22 May 1900; NWMP, 1900). The road was useful for transporting ore from the mines to the railway, but it did little to reduce overall transportation costs.

## **Speculation & Transportation**

By 1901, it was known that copper was present in paying quantities but profitable extraction continued to be another matter. Development and production costs continued to be high. In 1907, geologist R.G. McConnell estimated that drifting with hand drills cost about \$15 per foot (.3 m) while sinking a shaft cost between \$30 and \$40 per foot (McConnell, 1909). Capital investment was necessary to buy the expensive machinery — boilers, hoists, compressors and drills — required to extract ore in large quantities. On the other hand, few outside investors were willing to spend this type of money without assurances of the existence of a large ore body, the type of information that could only be ascertained by large scale mining. A third consideration in this equation, was the

inflationary price many claim holders asked for their properties. This view was expressed succinctly in the North-West Mounted Police Report (NWMP) of 1900:

*..the general consensus of opinion is that some of the men who hold copper properties have not the large capital required to properly work them, and hold their interests at a higher figure than would justify men with capital taking hold of them.*

Another factor holding up production was the high cost of transport. In order to be refined, ore had to be shipped to a smelter, usually in southern British Columbia or the northwest United States. The trip was a long, laborious one with the bagged ore being transported by wagon or sled to the White Pass terminal in Whitehorse, hauled by rail to Skagway, then shipped down the coast to a smelter. In 1902, the Grafter mine earned \$29 per ton on a shipment of 10 tons (9 tonnes) of ore. Shipping expenses, however, amounted to \$30 per ton with the following cost breakdown: — sacking, \$7; hauling, \$7; freight charges, \$10; and treatment, \$6. These high charges discouraged extensive shipments and more than one miner accumulated a large dump of ore while waiting for less usurious rates (NWMP 1902, 1904).

The Whitehorse Board of Trade lobbied for construction of roads to the mines and the construction of a smelter. The board of trade's smelter committee did not get very far; but in 1902, the territorial government began road construction from Whitehorse to the Grafter and Copper King mines (*Weekly Star*, 6 Mar. 1901; Johnston).

Even with the improved roads, however, there was still a major stumbling block to economical transportation — the high freight rates charged by the White Pass and Yukon Railway. In 1903, R.W. Brock of the Geological Survey of Canada visited the copper mines. He was optimistic concerning the area's worthiness for development but scathing in his condemnation of the railway:

*I can hardly understand the attitude of the railway company in not fixing a low enough rate to admit of the ore being sent outside for treatment, as it certainly would seem to any disinterested person that the company were standing in their own light in not doing their part in the development of the district, and at the same time furnishing freight where their cars are now being hauled over the road empty (Dept. Interior Annual Report, 1903).*

The mine owners were not the only ones with complaints about the railway freight rates. Once the high living days of the gold boom subsided, the directors of White Pass saw a drop in business. They attempted to maximize revenues by charging high freight rates but gave little thought to either railway maintenance or the concerns of Yukoners. In many cases, the tariff charges exceeded an item's wholesale price.

Many complaints were levied against the railway. Finally, in 1911, the Board of Railway Commissioners ordered White Pass to lower its rates by a third. White Pass appealed this ruling and at the next hearing were allowed to set a voluntary reduction rate. They did so, but only by ten per cent. This reversal

appalled Yukon residents and, according to Commissioner George Black, the judgment "has not a tendency to encourage prospecting in the territory" (RNWMP, 1911; Bennett, 1978).

The railway did make one positive move to assist the miners of the copper belt. During the boom period of 1907, the railway began construction of a spur line from Macrae to the principal mines. Work stopped for 16 months in 1908, however, when copper prices dropped and mining activity declined. The 12-mile spur line was finally completed in 1910 when it reached the Pueblo Mine. The following year, White Pass began running daily ore trains year-round (Bennett, 1978). The spur line was in operation until sometime after the end of the First World War, when production on the copper belt ended.

As with many such ventures in the Yukon, the miners were at the mercy of a transportation monopoly. It was difficult enough to make a copper mine a paying proposition with the constantly fluctuating world market price. When high transportation costs were added to the formula, it often did not pay to take the ore out of the ground. If the industry was to survive, it had to attract large amounts of capital and government support.

### **Booms & Busts**

By 1907, it seemed that the mine owners of the copper belt were on the verge of great prosperity. The attempts to woo outside investors were finally paying off. In 1905, the American Institute of Mining Engineers visited Whitehorse during their tour of British Columbia, the Yukon and Alaska. As part of the V.I.P. treatment, each visitor was presented with an elaborate pamphlet printed on satiny fabric in gold and silver-coloured inks. The contents extolled the rich prospects of the copper mines, the "magnificent roads" constructed by the territorial government, the prospects for water power of "unlimited capacity" and the many advantages of Whitehorse. The engineers repaid this generous hospitality with a favourable report on the belt, much of it taken directly from the pamphlet (*Daily Evening Star*, 1905; Yukon, 1907).

The territorial government had done its part to encourage hardrock mining development. The government funded an assay office in Whitehorse, where ore samples could be analyzed at no cost. They also provided a financial bonus for development work performed on quartz claims. The Copper King, the most developed claim in the area, received \$2000 in 1903 and an additional \$4500 the following year. The territorial council also lobbied the federal government on behalf of the miners, asking for a suspension of royalty payments on gold extracted from quartz and for assistance in building a smelter near Whitehorse. Both recommendations were refused (Johnston, 1975).

In a further attempt to help the miners, the territorial government purchased two diamond drills in 1903. Upon posting a bond to guarantee the safe return of the drills and fittings, miners could borrow a drill to further their exploration work. The loan records are incomplete but do show that the government drills were used at the Grafter, Pueblo and Valerie mines between

1908 and 1917 (NWMP, 1903; Yukon, 1908-1920).

The year 1906 brought a rise in copper prices and a favourable climate for investment. Many of the mines came under new ownership and some were worked for the first time in several years. Byron White of the Yukon Pueblo Mining Co. acquired the Pueblo, Carlisle and Tamarac properties. The original staker of the Arctic Chief, Captain John Irving, found backers for the Arctic Chief and Best Chance in late 1906 from an American syndicate. This group set up under the business name, Arctic Chief Copper Mines Company, with headquarters in Spokane, Washington. The Grafter had been bonded by a local syndicate, the year after staking, and Robert Lowe, the owner and current member of the Yukon Council for the Whitehorse district, resumed work in 1907. A.B. Palmer reactivated the Valerie and hired a crew in late 1906. In 1907, the War Eagle was worked by Messrs. Caldwell, Poyntz, Lucas and Kesler.

Colonel W.S. Thomas of Guffey & Thomas, from Pittsburg, Pennsylvania began purchasing properties at high prices in early 1907, triggering speculation that he might be a representative of the Guggenheims. By the spring, it was claimed that Colonel Thomas' syndicate owned upward of 500 properties including the Copper King and the Anaconda. Two corps of surveyors were kept busy defining the claim boundaries (McConnell, 1909; *Weekly Star*, 21, 28 Dec. 1906; 18 Jan., 19 April, 26 April 1907). One writer claimed that the inflated prices paid by the Colonel ultimately harmed the copper belt operations:

*The Pittsburg Colonel is said to have spoiled the market for mining property near White Horse by taking options at absurdly high prices; thus, a claim 1500 ft. square with a 3 to 5% copper lode across it was bonded for \$250,000. Such a load would break the back of any boom (Rickard).*

By November 1907, nearly 4000 tons (3629 tonnes) of copper ore had been shipped to outside smelters. Numerous new copper claims were staked and recorded. The larger mines — Copper King, Grafter, Arctic Chief, War Eagle, Pueblo, and Valerie — planned to stay open all winter. Many smaller operations had been worked over the summer including the Empress of India, Anaconda and Rabbit's Foot. White Pass had started building a spur line to the principal mine sites. The route was to run from Macrae to the Valerie, Arctic Chief, Grafter, Best Chance, Spring Creek, Pueblo, War Eagle, Copper King, Rabbit's Foot and Anaconda properties. The Pueblo's owner was stockpiling ore and ready to ship 400 tons (363 tonnes) a day as soon as the spur was reached the mine (Bennett, 1978; RNWMP, 1907).

A year later, this rosy prospect had faded. By 1908, copper prices had dropped from 24¢ to 12¢ a pound and much of the financing had dried up. Work was halted on the White Pass spur line after only seven miles of roadbed, about a mile past the Best Chance. White Pass management stopped construction until copper prices were higher. Although work continued on a number of properties, it was on a smaller scale and little ore was shipped. Most owners elected to stockpile ore until the copper market recovered (Johnston; RNWMP 1908).

Things had not improved by the following year. RNWMP Superintendent Snyder noted that, in the Whitehorse Copper Belt, there was "a lack of mining operations, the lack of which has not existed for years. . .The Whitehorse people are very hopeful and imbued with the idea that the darkest hours are immediately preceding the dawn" (RNWMP, 1909).

Over the next few years, activity was sporadic. The only mine to ship ore on a regular basis was the Pueblo. High transport costs continued to be a problem for the mine owners, somewhat alleviated by completion of the spur line to the Pueblo Mine in 1910. (Figure 3 shows rail cars at the Pueblo Mine, ca. 1912.) The Pueblo closed down in October 1910 but re-opened early in 1912 after its owner, the Atlas Mining Company, had negotiated a 20 year lease to a group of properties including the Pueblo, Valerie, Grafters, Arctic Chief, Best Chance, War Eagle, and other claims (Johnston; RNWMP, 1910). The company hired 200 men and, according to the optimistic, the belt was, once again "on the eve of developing into one of the largest copper producing regions on the American continent" (RNWMP, 1912).

Ultimately, world events determined the fate of the copper mines. With the onset of World War I, mineral prices rose and there was a great demand for copper. Although the Pueblo Mine shut down briefly in September 1914, at the outset of the war, it soon re-opened to fulfil wartime copper requirements. Productivity was high and up to 250 tons (227 tonnes) of ore per day were shipped from the Pueblo Mine alone. The peak year for production was 1916 when \$763,586 worth of copper ore was shipped outside (Johnston; RNWMP, 1914).

On March 21st, 1917; six men lost their lives when a portion of the Pueblo workings caved in. (Note: This disaster will be discussed in more detail in the section entitled "Working Conditions, Accidents and Disasters".) The unsafe conditions of the workings necessitated closure of the mine for some months. The Pueblo did re-open later that year and the mines of the copper belt continued production until 1920. By then, copper prices had fallen too low to justify the high costs of exploration, mining and transportation. During this early period, the Pueblo proved to be the greatest producer, shipping a total of 140,000 tons (127,006 tonnes) of copper ore.

The profitability of the copper belt always hung in a fine balance. Considering the high costs of extraction and transportation, there was a very narrow margin between being a viable operation and being broke. In this, the copper belt bears a close relationship to most of the Yukon's mining operations where fortunes rise and fall with the vagaries of world metal prices. For many years, Yukon communities were dependent on their main industry for their own well-being. The town on the edge of the copper belt was no exception.

## The Copper Belt Mines & Whitehorse

When the copper belt boomed, Whitehorse followed suit. Conversely, when there was little activity on the copper belt or when the mines closed down, this had an adverse affect on the community. Within a year after the completion of the townsite survey, Whitehorse was a bustling community. While a large part of this activity could be attributed to the town's strategic location at the transfer point between the train and the riverboats, a great deal was due to the staking rush on the copper belt and attendant speculation. By November 1900, a townsite lot was selling for up to \$3000. There were public predictions that the copper mines would employ "a great number of men" and undoubtedly, there were private expectations that claim holders would gain great wealth from their investments (*Daily Alaskan*, 14 Nov. 1900).

The development of the copper claims did bring mining jobs, but it also brought other spin-off benefits. From 1900 on, the Yukon Territorial Council financed trail and road construction to the copper belt. By 1909, the government had built 36 miles of road to all the major mines at a cost of \$32,000, with maintenance work running \$13,000 (*Weekly Star*, 6 Mar. 1901; Johnston).

Wood-cutting was another important industry associated with the copper mines. Wood was needed for timbering shafts and construction of mining structures. Those mines able to afford machinery also required firewood to fuel their steam boilers. Cutting firewood to feed the boilers was a full time job for many men. In 1914, the Pueblo mine's three boilers consumed 3000 cords of wood during the year's operations (Yukon, 1916). A well-known character of the day, "Buzzsaw Jimmy" Richards, had a contract to cut wood for the Pueblo Mine with his "big blue machine" in 1917. An eyewitness offered an amusing account of Jim's misfortunes in unloading the machine from a White Pass flatcar. The machine flipped over, both machine and Jim went flying, but neither were damaged and the bemused observer left to the sound of the "unceasing hum of the saw" (*Whse. Star*, 23 Mar. 1917).

As mentioned earlier, transportation facilities figured highly in the economics of copper mining. In addition to the railroad, wagons and sleds carried equipment and supplies from Whitehorse to the mines, and for many years, hauled ore down to the railway station. Eventually, motor vehicles joined the horse-drawn wagons and sleds. By the late 1910s, there was a taxi service between the mines and Whitehorse.

Boom times on the copper belt enriched the town's merchants. In his 1907 annual report, Superintendent A.E. Snyder remarked that:

*Consequent on the development of the mines, business has been good in the town of Whitehorse, and the merchants are prosperous. Several new buildings have been erected, and there is not a furnished house untenanted* (RNWMP, 1907).

Conversely, of course, the cessation of mining activity meant less business for the town. In 1911, the Whitehorse population dropped by 20 to 30 per cent as the result of the shutdown of the Pueblo Mine and layoffs by White Pass

(RNWMP, 1911). Over the years, the Whitehorse economy became more diverse. Once it became the seat of government, the town was not quite so shaken by fluctuations in copper mining. Even today, however, Whitehorse feels the effects of changes in the mining industry along with the rest of the territory.

### **Working Conditions, Accidents and Disasters**

Hand mining was not a job for the physically unfit. Shovelling, hand drilling, timbering, sorting rock, and hauling were some of the jobs involved in this back-breaking profession. Underground work took place in damp, dim, poorly-ventilated conditions. The candle or carbide lamps used at that time shed little light. Underground fires, built to melt ice, posed the danger of carbon monoxide poisoning. Often, techniques for handling and discharging explosives were rudimentary.

Some mines, the Pueblo in particular, had the reputation of being "wet". During normal operations, the mine filled with 500 to 600 gallons of water per minute requiring constant pumping (Bostock, 1957). In 1910, thirteen workers walked off the job at Pueblo partly due to dissatisfaction with the rate of pay, but also because of complaints that "the workings are wet" (RNWMP, 1910).

Wage rates in the mining district were variously described as being high, contributing to the excessive costs of running the mines, while McConnell found them comparable to earnings in British Columbia. In 1907, the rates of pay were reported as follows:

Hand miners	\$3.50 to \$4/day with board for 8 hours work
labourers	\$3.50 per 10 hour day
carpenters & blacksmiths	\$4 to \$5 per day
engineers	\$5 to \$6 per day

Two years later, wages had risen only slightly (\$3.50 and board for 8 hours labouring work; \$4.00 and board for 10 hours), while the cost of living was increasing (McConnell, 1909; Rickard; RNWMP, 1909).

The miners lived and worked at the mine site. Long work days and poor roads made commuting from Whitehorse impractical. While early prospectors made do with tents, most miners probably lived in log cabins, or bunkhouses. The Pueblo mine manager, however, lived in a handsome two-storey frame building (figure 4). During the boom period of 1907, Assistant RNWMP Commissioner Wood had this cheery report:

*At all the mines good winter quarters for the men have been provided and the blasts of old Boreas will pass unheeded, and so far the miners, the majority of whom are members of the Federated Miners Union, are satisfied with the way things are going (RNWMP, 1907).*

There are few figures available for the numbers of workers employed at the mines during the first two decades of this century. Certainly, the copper belt never did support the "thousands of men" anticipated soon after the initial discoveries. The work force fluctuated according to the level of activity on the copper belt. After the crash of 1908, only 25 men were working in the entire district. Four



years later, the Atlas Mining Company hired about 200 workers for its operations at the Pueblo, Best Chance, Grafter and Valerie. In 1910, there were 70 people on the Pueblo work force at the time of the walk-out (Rickard; RNWMP, 1910, 1912).

Mining has always had a reputation for being an arduous and dangerous profession. Although some claim that mining generally claims fewer lives than other heavy construction projects, underground mining deaths seem to be considered particularly tragic.

The first copper belt mine disaster took place in May 1907 at the Copper King Mine. One of the victims was a copper belt pioneer, William P. Grainger, one of the owners of the Copper King mine. The other, Gilbert Joyce from Newfoundland, had been employed at the mine for only four days. The mine had not been worked for some time and a crew was readying the workings for inspection by a potential investor. A fire had been burning underground for a number of days to thaw the ice encasing the workings. Grainger and Joyce descended into the shaft to remove the fire remains and prepare the shaft. They were overcome by "fire damp" or carbon monoxide poisoning. By the time the mine had been pumped free of gas in order to effect a rescue, both men were dead. The irony of Grainger's death, on the verge of financial success, did not go unremarked in the newspaper account of the incident:

*Grainger was the most ardent believer in "Greater Whitehorse" the country has ever known and for nine long years he worked his property as his means would permit, always and continuously boosting the camp and predicting for it a glorious future. And now, just as his fondest anticipations were being realized, he is taken to that bourne from which none return (Weekly Star, 10 May 1907).*

In 1916, the Pueblo mine reached peak production sending out ore to a value of \$763,586. It also became a dangerous place to work. In three separate incidents, three men died as a result of being hit with heavy objects underground. In all cases, the resulting inquiry determined that either the worker was careless or no one was at fault (Yukon, 1916. Ser. 6, v. 48, f. 30468; f. 30549; f. 30555).

### *The Pueblo Mine Disaster*

The most notorious tragedy of all, however, occurred in the spring of the following year. On the morning of March 21st, during an underground inspection in the Pueblo Mine, Superintendent Berg learned that the timbers were taking weight at the 400 foot level. He evacuated the 400 level stope but neither he nor the mine manager considered the situation to be hazardous. An hour later, rock had caved in between the 200 and 400 foot levels trapping nine miners. Rescue efforts commenced immediately. A diamond drilling crew pushed an 85 foot drift through solid granite in a record time of 72 hours to reach three survivors — Harry Graham, Tom Davis and Nick Radovich. (Figure 5 shows survivors soon after the rescue.) Six men remained entombed in the collapsed mine. Rescue operations continued until the 29th, at which time the shaft condition were deemed too unsafe to continue. The mine was abandoned in some haste leaving

behind all mining machinery including the government diamond drill.

A commission of inquiry was held on April 2nd and 3rd at the Pueblo mess house. Captain A.L. Bell, assisted by mine foreman D.J. McDonald, listened to the testimony of 20 miners from the Pueblo, most of whom stated they had considered conditions to be as safe as any other comparable underground operation. The findings exonerated the management of any blame for the accident. The cause was attributed to the Pueblo being a "wet" mine with many watercourses running through the property. They presumed that the accident had been caused by water accumulating "in some unknown chamber in such volume as to cause great pressure, and this pressure would find an exit at the point of least resistance, and if such point happened to be in the hanging walls of one of the stopes it would naturally cause the cave-in or collapse; and if the hanging wall gave way it would be natural for the pillar above, or the back to fall in" (*Weekly Star*, 6 April 1917).

The mine shut down and filled with water for four months before the company pumped out the workings, salvaged most of the machinery and resumed operations. The disaster had been a severe economic blow to the company and a tragic chapter in copper belt history (Gaffin, 1980; *Weekly Star*, 30 March, 6 April 1917; Yukon, 1917).

## **PERSONALITIES: THE EARLY YEARS**

Major figures involved in the early development of the White Horse Copper Belt generally fall into two broad categories: the pioneer miner/prospectors, who staked and worked many of the early claims, and the businessmen/entrepreneurs with interests in a mine or mines. Many of the people in this latter group were involved in a variety of enterprises and actively boosted development of the copper properties in their efforts to establish Whitehorse as a prosperous community. What follows are brief biographies of significant individuals from both groups, as well as one much-cited geologist.

### **Ed Dixon**

Ed Dixon, a former NWMP corporal, established a number of businesses in the new townsite of Whitehorse using funds earned by his employment as a river pilot. During the height of the Klondike Gold Rush, Dixon was responsible for safely steering hundreds of boats through the churning waters of Miles Canyon and Whitehorse Rapids.

Dixon and his partner John Smart erected the Closeleigh Hotel and Saloon, later renamed the Pioneer Hotel, on Front St. in Whitehorse, early in 1900. Dixon sold out his interest in this building later that year. His other enterprises included management of the Regina Hotel and the construction of the Whitehorse Steam Laundry. Dixon acquired a couple of claims ca. 1906, the Rabbit's Foot Extension and the Sadie. By 1916, he was also a co-owner of the Grafter Mine together with three other Whitehorse businessmen: Robert Lowe, John P. Whitney and George Armstrong.

At various times, Dixon was the chief of the volunteer fire department and president of the Whitehorse Conservative Association. He was elected to the territorial council in 1915, as the member for Whitehorse. In 1916, Dixon enlisted to fight in Europe as a member of George Black's 104th Regiment. After the war, he moved to British Columbia where he lived until his death in 1955. At his request, his ashes were scattered over Miles Canyon, a ceremony attended by an RCMP honour guard (Dobrowolsky & Ingram, 1993; Yukon, Series 6, vol. 36, f. YQ8479 (8); f. YQ8480 (9); Series 8, vol. 1A, file 850).

### **William P. Grainger**

Soon after Jack McIntyre staked the first claim on the Whitehorse Copper Belt, he became partners with Kentucky native, William P. Grainger. Grainger had moved to the Yukon in 1895 and prospected in the Wheaton Valley area as well as in the copper belt. After McIntyre's death in 1902, Grainger struggled to keep the Copper King operation going with a series of loans and mortgages.

In the spring of 1907, it appeared that the fortunes of the Whitehorse copper mines were on the upswing. Copper prices were high and a number of outside financiers had travelled to Whitehorse to invest in or purchase copper properties. On May 9th, Grainger and an employee, Gilbert Joyce, descended into the mine to remove the remains of a fire and prepare the shaft for examination by a visiting mining expert. Both were overcome by carbon monoxide fumes and, by the time the mine was pumped free of bad air, both were dead at the bottom of the shaft. Grainger was found clinging to the bottom rungs of the ladder with a death grip.

According to *The Weekly Star*, Grainger was "a typical Kentuckian, intensely impetuous but generous to extravagance in his willingness to aid and assist others." A slightly misspelt version of Grainger's name survives with Mount Granger, a hill 16 miles southwest of Whitehorse, and the Granger subdivision west of Whitehorse (Coutts, 1980; Grainger, 1900-07; *Weekly Star*, 10 May 1907; Yukon, 1907).

### **Robert Lowe**

Born in Brampton, Ontario ca. 1868, Robert Lowe was a most versatile individual and entrepreneur. Soon after coming to the Yukon in 1899, Lowe became deeply involved in the Copper Belt and the brand-new community of Whitehorse. He owned the Grafter Mine and was part owner of the War Eagle and LeRoi properties. He had further interests in the Copper Belt through his cartage business which used horses, wagons and sleighs to carry equipment and supplies to the mines and haul ore to the railway station.

By 1901, Lowe was the President of the Whitehorse Board of Trade. He was also an active Liberal in Thomas O'Brien's "Steam Beer" party. From 1902-1912, Lowe sat on territorial council. He was elected Speaker in 1909 and again in 1920 where he served until his resignation in 1925. To honour his services to the territory; in 1922, the bridge over Miles Canyon was named the Robert Lowe

Bridge by Governor General Lord Byng.

Robert Lowe died 22 November 1929 near Moose Jaw, Saskatchewan (*Dawson Daily News*, 16 Aug. 1922; *Whse Star*, 1 May 1901; MacBride Museum research file; McGee, 1901-79).

### **Richard George McConnell**

When Richard McConnell spent the summer of 1907 investigating the geology of the Whitehorse Copper Belt, he was no stranger to northern exploration work. In 1887, McConnell was selected to be a member of the famous Yukon Expedition, together with George Dawson and William Ogilvie. The Canadian government sent these two geologists and one surveyor on a scientific investigation to the Yukon area. Their maps and descriptions proved invaluable to the thousands who stampeded north, ten years later, during the great Klondike Gold Rush.

McConnell was born on March 25, 1867 in Chatham, Québec. In 1879, he graduated from McGill University with a Bachelor of Arts and first class honours in the natural sciences. He was hired by the Geological Survey of Canada the following year and for thirty years did field work in western and northwestern Canada, much of it in the Yukon. His report on the copper belt, simply entitled "The Whitehorse Copper Belt", was published in 1909. For many years, it was considered the definitive study on the copper belt and proved an invaluable source of information for prospectors, miners and investors (Wright, 1976).

### **William Samuel "Sam" McGee**

*Now Sam McGee was from Tennessee, where the cotton blooms and blows.  
Why he left his home in the South to roam round the Pole, God only knows.  
He was always cold, but the land of gold seemed to hold him like a spell;  
Though he'd often say in his homely way that "he'd sooner live in hell."*

Contrary to Robert Service's famous poem, Sam McGee was not from Tennessee. In later years, McGee claimed that Service had parodied him and that he actually liked the winter cold.

Sam McGee was born in Peterborough, Ontario on August 28th, 1867. He was one of the early claim stakers on the copper belt. On July 16th, 1899, he located the War Eagle claim. During his time in the southern Yukon, McGee was active in a number of areas. He ran a roadhouse at Canyon River, helped construct the first Aishihik River Bridge, did some road-building and worked at Racine's sawmill on Tagish Lake, providing lumber to Conrad.

McGee moved out of the Yukon ca. 1909, but kept his copper belt connections. While McGee was not active in the operation of the War Eagle Mine, he did retain an interest in the property. McGee was also part owner of the LeRoi claim and the LeRoi extension mining claim.

After his death in Calgary on Sept. 11, 1940; his widow sent inquiries about McGee's holdings in the War Eagle. By that time, there was no record of McGee as a part owner, his claim probably having lapsed due to non-payment of

back taxes. McGee did leave one legacy of his residence in the Yukon, his Whitehorse log cabin home now stands by the MacBride Museum (McConnell, 1909; McGee, 1901-1979; Service, 1953).

### **Jack McIntyre**

Jack McIntyre, from San Bernardino, California, was the first prospector to stake a claim on the Whitehorse Copper Belt. On July 6th, 1898; he staked the claim that later became the Copper King Mine and gave his name to a nearby creek. By 1900, McIntyre and his partner, William P. Grainger, were able to ship a sample shipment of 9 tons (8 tonnes) of bornite ore to a smelter in Everett, Washington. The results were most promising, yielding 46.4% copper.

McIntyre died tragically only two years later. In November 1902, he and a partner left Atlin by dogsled, bound for Log Cabin on the White Pass and Yukon Railway with a shipment of mail. They never arrived and, despite an extensive search, the bodies were not recovered until the following spring from under the ice of Windy Arm. The 1585 metre (5200 foot) mountain overlooking the copper belt, was named McIntyre Mountain in his honour soon after his death (Coutts, 1980; McConnell, 1909).

### **H.E. Porter**

H.E. Porter staked the Pueblo claim on July 7th, 1899. Shortly after, the Whitehorse Copper Company took over this claim and it was one of fifteen claims bonded to the British American Corporation. The Pueblo later became the most productive of the early copper belt mines. Porter continued to prospect in the Yukon and, in June 1907, died on the headwaters of the Stewart River.

This pioneer prospector gave his name to the creek that ran across the claim. In the 1960s, the Porter Creek subdivision of Whitehorse was named after the nearby creek (Coutts, 1980; McConnell, 1909).

## II. THE FALLOW PERIOD: 1921 - 1961

### Introduction

In the period between the wars, many Whitehorse residents treated the copper belt as a recreation area. Walking expeditions and bicycling trips were organized along the old roads and trails. The old workings and buildings became picnic destinations (figure 6).

During this period, activity on the copper belt was sporadic at best. While a few major companies became interested in examining and exploiting the copper belt reserves, none were able to reach the stage of profitable production. Problems included the difficulty in consolidating claims, many of which were held by private individuals; lack of capital for development; poor showings on exploration work; and the ever changing price of copper. Toward the end of this period, New Imperial Mines and Metals began the work of consolidating claims and preliminary exploration work that would lead to a producing mine half a dozen years later.

### The Richmond Yukon Company

In 1927, the Richmond Yukon Company, Limited, began prospecting the Pueblo, Tamarac-Carlisle, and War Eagle-LeRoi groups in the copper belt. The company had acquired ownership of the Pueblo and Tamarac-Carlisle claims. The War Eagle-LeRoi property was under option with the purchase price to come from royalties to be paid upon production. The company's strategy was to determine by diamond drilling whether enough ore was present to justify the erection of a concentrator. By milling its own ore, the company hoped to avoid the high transportation costs that had plagued earlier operations.

By that time, much of the copper belt infrastructure had deteriorated. A visiting geologist reported:

*The spur line is no longer ready for use, as many of the fills have been washed out, the cuts sloughed, and replacements and repairs are needed on ties, bridges, and culverts. It would require considerable money to place this spur line and the ore bunkers at Skagway in shape for handling crude ore (Cockfield, 1927).*

Richmond Yukon did get as far as having a plan drawn up of their proposed mine and mill site, and managed some minor production, but once again world economics intervened. With the depression, copper prices dropped from 18¢ to 8¢ a pound and the company ceased activity in the area after 1929 (Dickson, n.d.; Holway, 1983; Kenway, 1968).

## **Noranda Mines**

Noranda Mines, Limited, became interested in the possibilities and properties of the Whitehorse Copper Belt in the late 1940s. With direction from Dr. A.M. Bell and B. Brynelson, the company began acquiring properties and carrying out an exploration program.

During 1947, Noranda staked 66 claims in the Whitehorse group and 22 claims in the Dugdale group of the copper belt. These claims included the Big Chief, Little Chief, Keewenaw, and Valerie sites. The company also took out an option on the Pueblo property, which by then consisted of several Crown granted claims. A central, semi-permanent camp was established at McCrae and exploration commenced with a general geophysical survey.

In 1948, the company diamond drilled approximately 10,000 feet (3048 m). Noranda discontinued exploration work in this area for three years but, in 1951, they carried out a work program consisting of a geophysical examination, diamond drilling of anomalies and a detailed geological study of the area. At this time, Noranda gave up its claims north of the Arctic Chief Crown Grant. They still retained considerable property in the region including four "Whitehorse" claims, and the Bell Fraction adjoining the Golden Gate, Whitehorse, Arctic Chief and Verona Crown Grants. They also retained a group of 10 "Whitehorse" Claims located two miles south and another group of five just west of Dugdale Station. No record was found of the company carrying out additional assessment work in the copper belt during the 1950s. According to one chronicler, the company withdrew from the area due to the low grade of copper indicated by the drilling program (Debicki, 1982; Hilker, 1967; Holway, 1983; Kenway, 1968).

## **Hudson Bay Exploration and Development Company**

In 1950, another major exploration company took an interest in the Whitehorse Copper Belt. The Hudson Bay Exploration and Development Company took an option on a group of claims held by Messrs. Smith and Henderson in the Dugdale Lake area at the south end of the Whitehorse Copper Belt. As well, 23 new claims were staked.

In 1953, Hudson Bay carried out diamond drilling on its claims at Dugdale Lake in the southern end of the copper belt. This work probably included the Cowley Park property. As with Noranda, the company's interest in the area seems to have ceased at this point (Debicki, 1982; Holway, 1983).

## **Imperial Mines and Metals**

In September 1954, a new player came on the scene. Yukon Member of Parliament, Aubrey Simmons, incorporated a company entitled Imperial Mines and Metals Limited. The following year, the company acquired several claims in the Whitehorse Copper Belt through staking, purchase or option. In 1956, Imperial conducted magnetometer surveys and diamond drilled several holes on the Best Chance claims. Drilling results were discouraging and further exploration activity ceased for several years.

The company name was changed to New Imperial Mines, Limited (NIM) in March 1957. New Imperial began to increase its holdings. Among the most significant properties acquired during this time, were a group of claims from the Robert Lowe estate. These claims would later prove to be highly important. By 1961, New Imperial held many of the former high-grade producing claims of the copper belt including the Pueblo, Copper King, Carlisle and War Eagle. Still the company was unable to stimulate investor interest in the properties. It was later presumed that many capitalists still regarded the Whitehorse Copper Belt as an interesting relic of small scale, high grade mining rather than a potential site for profitable, large tonnage operations (Hilker, 1967; Holway, 1983; Johnston; *Whse Star*, 1967).

### **III. INVESTMENT AND PRODUCTION: 1962 - 1982**

#### **Introduction**

The conditions necessary for a profitable mine had changed greatly over fifty years. By the 1960s, it was no longer possible to ship raw high grade ore to a nearby west coast smelter. Both the high grade ore and the smelters were gone. As early as 1927, it had been recognized that it was necessary to first mill the low grade ore at the copper belt, to ease transportation costs. The smelters at Crofton and Ladysmith, British Columbia and those in the northeast United States had been closed for several decades. New Imperial Mines ended up shipping its concentrate to a smelter in Japan.

Much of the mining process had been mechanized by this time period. Heavy equipment, drills capable of larger diameter and much deeper holes, and more effective blasting technology allowed for economical mining of low grade ore. The complex processes of milling the ore could be handled by machines and relatively few operators.

The high cost of transportation had not changed. The White Pass and Yukon Railway was still the most feasible carrier for transporting the copper ore to tidewater. As with the early miners, however, New Imperial Mines complained about high transport costs.

#### **Exploration & Expansion, 1962-1963**

The company's fortunes took an upswing in April 1962 when Arnold Pitt joined the New Imperial Mines organization. Pitt brought fresh confidence and optimism to the company. Best of all, he was able to attract the investment capital necessary to begin a drilling program. Pitt became president of the company in December.

Money was raised for a drilling program by the sale of company shares. On June 1st, 1963, drilling began on the Arctic claims under the direction of consulting geologist, Dr. A.C. Skerl. The first drill core, 69.5 feet deep bore 4.2%



copper ore. By October 1st, diamond drillers had driven a total of 12,000 feet (3658 m). The company proudly announced to its shareholders that, at that point, there were ore reserves of 700,000 tons (635,029 tonnes) grading 1.2% copper, 25% iron and \$1 in silver and gold per ton. Drilling continued over the winter.

The company also expanded its holdings on the copper belt. By the end of the year, New Imperial controlled 310 claims through staking and option agreements, an increase of 188 claims over the previous year.

The New Imperial Mines Annual Report for 1963, showed great enthusiasm for future development. The company pledged to take the next steps necessary for mineral production: mill feasibility studies, setting up a transportation infrastructure, negotiations for marketing concentrates, and finding additional financing (NIM, 1963; *Whse. Star*, June 1967).

### **Building a Mine, 1964 -1966**

Activity accelerated over the next few years. The exploration program continued and expanded in 1964 and an additional 38 claims were added to the company's holdings. By March 1965, proven reserves totalled 4,590,000 tons (4,163,978 tonnes) with a grade of 1.17% copper plus profitable amounts of gold, silver and molybdenite. In June, Wright Engineers Ltd. of Vancouver produced the first mine feasibility report. This document examined the economics of open pit mining, milling and shipping, based on rates of 1000 to 2000 tons (907 to 1814 tonnes) of ore being processed per day.

In August 1964, the Sumitomo Metal Mining Company, Limited of Japan took an exclusive option to buy mill concentrates in return for contributing capital for mill financing. Sumitomo also bought 200,000 shares of New Imperial stock for \$150,000 in order to finance further exploration (NIM, 1964).

By 1966, New Imperial had arranged most of the financing required for mine development and mill construction. Sumitomo provided two thirds of the funds required for mine and mill installation and supplied technical assistance in revamping mill design to accommodate an increased production from 2000 to 2500 tons (1814 to 2268 tonnes) per day. The remaining capital came from the Toronto Dominion Bank, which provided a first mortgage loan of \$2,750,000. Wright Engineers prepared a more detailed report in which the cost of mine facilities were set at \$7,200,000. Equipment was ordered, construction began on a two mile access road from the Alaska Highway to the mine site, and crews began clearing and excavation of the mill site. Construction of the mill buildings began in June 1966. (Figure 7 shows fine ore bin and mill under construction.)

Continued exploration yielded some pleasant surprises. Geologist Bob Hilker supervised deep drilling exploration below the open pit limits of the Little Chief ore body. The results showed ore reserves of more than 3.5 million tons (3,175,146.4 tonnes) grading, approximately 2.14% copper. Thus, even before open pit operations began, the mine management made plans to convert to an underground mining operation once the Little Chief had been mined out by open pit work (Gaffin, 1980; NIM: 1965, 1966; *Whse. Star*, June 1967).

## Open Pit Operations

New Imperial Mines began milling ore from its open pit operations on May 1st, 1967. The company had a payroll of 95 workers. Three shifts of workers kept the concentrator going 24 hours a day, seven days a week, while two crews worked five and half days at the open pit. Plans were made to increase the pit crew once the mill was operating at peak efficiency. (Figure 8 shows mine location plan.)

The official opening was held a month later with great fanfare. Dignitaries flew to Whitehorse from all over the world; the public was invited to tour the new facility; and the Plaza Bakery outdid itself with an immense cake, topped with an artistically arranged stack of mineral chunks.

Within a year, the mine had produced 10,839,000 pounds (4,916,570 kg) of copper in concentrate form as well as 13,000 ounces (52,611 kg) of gold and 131,000 ounces (3,713.85 kg) of silver. The mill recovery rate of the copper rose from 76% to 81% in April 1968. Ore was being mined from both the Little Chief and Arctic Chief deposits. The workforce had increased to 150 people.

During this phase of the mine's operations, open pit work was carried out at the Little Chief, Arctic Chief, War Eagle and Black Cub deposits. Exploration continued and further ore reserves were identified at the Keewenaw, Gem, Cowley Park and Best Chance properties.

Plans for further open pit work went on hold in 1970 when it was discovered that some of the reserves were unsuitable for mining and the copper market plummeted. In June 1971, the open pit operations were suspended and the mill closed down. Copper prices had dropped from the 1970 price of 70¢ per pound to an average of 48¢ a pound during the first six months of 1971. Once open pit mining stopped, New Imperial and Sumitomo cancelled their contract by mutual agreement.

Between 1967 and 1971, over 3,180,000 tons (2,884,847 tonnes) of ore were extracted from the various open pit operations. An estimated 2,800,000 tons (2,550,117 tonnes) of ore reserves remained under the Little Chief pit but getting it out would require more funding and a company reorganization (Johnston; NIM, 1967-71).

## Transportation

During this period, the shipping of the ore concentrate from the mine to a Japanese smelter took place in four stages. The mine made use of the special container system developed by the White Pass & Yukon Route in the 1950s. Twenty tons (18 tonnes) of concentrate was loaded into each White Pass container, then sealed with a layer of plastic (figure 9). The containers were trucked from the mine to be transferred on to railway flatcars at the White Pass' Utah Loading Yard off the Alaska Highway. At Skagway, the containers were loaded on to the White Pass container ship, the *Frank H. Brown*. The concentrate was then shipped to Vancouver, and unloaded at Vancouver Wharves storage shed, prior to shipping to Japan (NIM, 1967-69; Wray, 1993).

Transportation costs were greatly reduced by shipping the ore in

concentrate form. Nevertheless, moving the concentrate from the mine to the refinery was still a complicated, time and money consuming process.

### **Reorganization & Moving Underground**

In late 1968, New Imperial commissioned a study to determine the feasibility of an underground operation. Once the Little Chief pit was mined out in 1969, the company took the first steps in developing an underground mine. In November, the decline, or ramp, leading to the underground ore body was "collared".

When the mill and open pit mines closed down in June 1971, a small work force of about six miners stayed on to develop the underground operation. The company commissioned a study to "assess the economics of an accelerated development for mining underground." The study, completed in April 1971, determined that by sinking a vertical shaft to be used in conjunction with the decline already under construction, at least four and a half years of profitable mining could be carried out in the Little Chief and Middle Chief ore bodies. Sinking a shaft was still one of the more expensive operations and necessitated the purchase of new machinery including a headframe and hoist. The company estimated that \$6,800,000 was needed for capital and development work over 18 months as well to cover the cost of the shutdown and other overhead.

The financing for this work was arranged by a joint venture with Hudson Bay Mining and Smelting Company, Limited (Hudbay) and the Anglo American Corporation of Canada, Limited (Amcan). The new company arising from this venture was christened Whitehorse Copper Mines, Limited.

In 1972, the new company concentrated on readying the underground mine for production. The sinking of the vertical shaft was completed in May and the mill re-opened on December 18th. The following April, a connection was made between the shaft and the decline at the 1700 foot (518 m) level. Underground production could begin in earnest. (Note that all underground levels at Whitehorse Copper Mines referred to height above sea level rather than depth below the surface.)

Whitehorse Copper entered a period of prosperity. Copper prices were high and ore production rose steadily. In 1975, copper represented 12.9% of all mineral production in the Yukon and by 1976, Whitehorse Copper had repaid all its loans. In 1977, the mill processed 901,459 tons (817,790 tonnes) of ore — an increase of more than 100,000 tons (90,718 tonnes) over the previous year. A record of 26,340,682 pounds (11,948,132 kg) of copper were shipped in concentrate. Copper prices were high at 63.29¢ per pound. By 1976, the company had repaid all outstanding loans.

In 1978, Hudson Bay Mining and Smelting purchased all outstanding Whitehorse Copper shares at \$4.00 per share. The company was now a wholly-owned subsidiary of Hudbay (Holway, 1983).

In 1979, Whitehorse Copper introduced the vertical crater retreat method of mining to its underground operations. This was a fairly new technique and many

of the difficulties were ironed out by the miners at Whitehorse Copper. Vertical crater retreat mining proved particularly suitable for use in the soft ground of Whitehorse Copper. (See geologist's report for more detailed explanation of this mining method.)

The crew at the mechanical shop built or rebuilt much of the mine equipment. The famous "Clarkmobile", named after Clark Van Steinberg, was a mechanic's truck specially-adapted so that repairs could be made underground. A former worker described one innovative adaptation that did not work out. A number of mechanics had souped up one of the scoop trams, the modified front end loaders used to move ore underground. The scoop tram had been super reinforced and set up so that it was easier to repair. The scoop tram was so heavy that it was unable to tram ore up the spiral ramp. Consequently, it was used to haul light loads of material around the mine (Clarkson, 1993).

By 1981, mine production had risen from 1900 to 2500 tons (1724 to 2268 tonnes) of ore per day. Gold and silver production accounted for 35% of 1981 revenues and the copper concentrate was 47% copper. Customers in Europe, the United States and Canada bought copper from Whitehorse (Holway, 1983).

### *Transportation*

In 1972, Whitehorse Copper had arranged to have their concentrate smelted at Noranda, Québec. The first stages of transport remained the same: by truck to the railway, by rail to Skagway and by ship to Vancouver. At Vancouver the ore was loaded on to rail cars to travel cross country to the smelter. In discussing these arrangements, the company management echoed a familiar refrain from earlier in the century:

*The transportation cost is a substantial one to our Company and we hope that our Governments will see fit to make less costly the shipping of Canadian natural resources for processing within Canada (Whitehorse Copper, 1972).*

In later years the concentrate was railed to the Hudson Bay smelter at Flin Flon, Manitoba.

## **Working Conditions and Labour Relations**

### *The Mine and the Union*

Union organizing began at New Imperial Mines soon after the mine opened. Mine workers signed up with the United Steelworkers of America, and Local 926 was formed over the winter of 1966/67. Roy Watson, a welder, was the first president and negotiated the first union contract. The first contract added 15¢ to the base rate of \$3.50. By the time, the mine closed, the top rate was \$17.05. For many workers, particularly underground miners, the bulk of their pay came from "bonus", the additional payments based on high production.

Although no union activists were interviewed during the research for the this paper, other mine workers seem to feel that relations were generally good

between the union and the management. In 1976, mine workers went out on strike from June 29th to August 27th. The Whitehorse Copper employees joined miners from Elsa, Faro and Cassiar in protesting against the federal government's Anti-Inflation Board. On two occasions, union members staged a walk-out. In one incident, the walk-out was in protest of a new superintendent's action in reclassifying jobs without union consultation. Otherwise, most differences seem to have been resolved fairly amiably (Holway, 1983; *The Miners Voice*, Sept. 1976; Percival, 1993; *Yukon News*, Oct. 1982).

### *Working Conditions*

Working conditions underground were typical of most similar operations; that is, noisy, wet and full of fumes. Noise came from the ventilation system, drills, explosions and heavy machinery. One worker recounted that she had to wear earplugs as well as a pair of industrial earmuffs. Water was used for drilling and as with the Pueblo, there were underground watercourses. The shaft was a particularly wet place to work; and the skip tender, in charge of transporting ore up the shaft, was subjected to constant rain. To make the mine operations more efficient, the management had elected to use a "trackless" system. Instead of electric trams, diesel powered scoop trams and transport vehicles were used. Consequently, the air was full of diesel fumes. One former employee recalled jokes of how the mine inspector was the "best paid employee in the Yukon". When the inspector was due for a visit, half the equipment would be shut down and by the time he arrived, "the air was as clear as a bell" (MacGillivray, 1993; Wray).

### *Aboriginal and Women Workers*

The mine's workforce included women and Aboriginal workers, although they comprised a fairly small proportion of the employees. As with other employees, there was a small group of Aboriginal workers who stayed on at the mine for many years; others came and went over time. Women worked in the office, the warehouse, the mill and as surface labourers. In 1975, lobbying efforts by Trudy Vanderberg, the Yukon Status of Women and Faro MLA Stu McCall, resulted in an amendment to the Yukon's *Mining Safety Ordinance* allowing women workers underground. The following year, Janeane MacGillivray, became the first woman in the Yukon to be hired as an underground mine worker (MacGillivray, 1993). (Figure 10 shows Janeane MacGillivray with "Number 68", a long hole or ring drill used in production drilling.)

### *Mine Safety*

Many experienced miners seem to accept that underground mining has an element of inherent danger. For some, this seemed to contribute a certain spice to the job. One worker mentioned how many fellow employees reacted to a generally stressful work situation with the attitude of "work hard, play hard and basically die young." Many were less safety conscious than others. At one point the safety committee awarded \$25 restaurant vouchers to people maintaining a good safety

record. Apparently the main result of this incentive was that workers stopped reporting accidents in order to obtain the meal certificates.

During the life of Whitehorse Copper, there were five fatalities. One worker died when his loader overturned near the tailings dam, the other four were all underground accidents (Clarkson, MacGillivray, Percival, 1993).

### *Looking Back*

Most of the former employees interviewed seem to feel, in retrospect, that they had not realized how good they had it at Whitehorse Copper. In support of this, they cite the convenience of having the mine near a major town rather than in a remote location, a generally open management style, and a chance to work at a variety of interesting jobs. This view was propounded by Peter Percival:

*It was a very good place to work. . . It was the first mine that I really worked in. . . For me, it was a great place. It had open pits and underground, and several different types of mining systems we used. I had a great time there (Percival, 1993).*

The first woman underground miner had quite a different experience. Janeane MacGillivray found herself in an isolated and often terrifying situation. During a speech she made several years later, she spoke of this and her remarks are worth repeating:

*I knew there were a few women working underground in other parts of Canada at the time, but can honestly say I felt incredibly alone and isolated in this experience. Once I proved to the men that I was there to work my brains out, they accepted me and in the main, supported me. Like them, I worked hard and played hard, and as a result of that experience I came to understand a couple of things.*

*One, that men working in dangerous physically demanding blue-collar jobs don't exactly have it easy. Coupled with the stress that comes from these jobs is the expectation that they not talk about their fear or other feelings about the work. It is acceptable to drink hard and party hard, but you may NOT say you're scared. . . Many of my co-workers have died since I worked at the mine — from accidents involving alcohol, from heart attacks, from suicide (MacGillivray, 1991).*

### **Recession & Closure**

As early as 1977, Whitehorse Copper pointed out in its annual report that ore reserves were sufficient to keep the mine alive until mid 1981. By 1980, this estimate had been boosted upward by a year. The company continued surface exploration of its 714 claims and examined the feasibility returning to open pit mining when the underground ore reserves were exhausted. This alternative did not prove viable.

By the early 1980s, metal prices were falling. The economic recession of 1982 caused a drop in housing construction and automobile fabrication, the two main markets for copper. The recession had a severe impact in the Yukon. All the

territory's major mines shut down and the White Pass and Yukon Railway was forced to close its operations. Whitehorse Copper was the last mine to shut down. The last production day was December 22, 1982 and the mill closed down December 31st, 1982. A skeleton crew stayed on until the summer of 1983 to handle the mine abandonment. Later a watchman stayed in a trailer on the premises until about 1990. This marked the end of copper mining on the Whitehorse Copper Belt (Holway, 1983; Whse. Copper, 1977; *Western Miner*, Oct. 1980; Percival 1993).

### **Whitehorse Copper & the Community**

When New Imperial Mines officially opened on June 17th, 1967, the community of Whitehorse enthusiastically welcomed the new mine. A special commemorative edition of the *Whitehorse Star* hailed New Imperial Mines as the largest new industry and the first mine in the Whitehorse area in fifty years. At the time, Whitehorse had a population of 6000 people. The 95 member workforce at the mine boosted the town's economy with a million dollar payroll. Additional workers were hired as open pit operations expanded. By 1968, the mine employed 150 people, most of whom were hired locally and trained on-the-job (NIM: 1967, 1968; *Whse. Star*, June 1967).

Civic leaders appeared well aware of, and grateful for, the various spin-off industries generated by the mine. The mine carried 20% of the load on the Whitehorse electrical system. The White Pass & Yukon Route transported the ore concentrate in a special container system designed to fit trucks, trains and ships. Finally, many service industries benefitted from the spending power of the mine's workforce.

The mine management made a serious effort to be good corporate citizens. The mine sponsored various sports teams and hosted an annual Christmas party for the children of their employees. At the mine shop, tradesmen fabricated the apparatus used to support the flour pack during the Rendezvous flour-packing contest. According to a former worker, the mine was always good for a handout:

*I can't remember anyone in town not liking the mine, or complaining about it. Of course it seemed like everyone you knew worked for the mine* (Wray).

Interviews with former Whitehorse Copper employees revealed that working conditions were much improved by the mine being so close to a major community. A major difference from other large mines in more remote locations was that the workers did not have to stay on the premises or in a company town. A former mine engineer articulated a widely-held view:

*It was wonderful. Most of the people owned their own houses and if they got mad at the Company at work, they didn't get mad at the Company who was their landlord. . . It was just a much healthier atmosphere. If you didn't want to work at Whitehorse Copper, there were other jobs. . .* (Percival, 1993).

The mine's large workforce, mainly composed of young men, also had an

impact on the community's demographics. A former worker mused on this:  
*Mining towns have a particular character and Whitehorse was blended between the mining and the government influence. . . If you were a young man, you could go there and make good money and live quite well, quite easily* (Clarkson, 1993).

Mine lay-offs in 1970, and the closure in 1982, also affected the town. Although the population figures for Whitehorse continue to show a steady increase during both periods, more people were on unemployment insurance or social assistance. Many workers left to seek employment elsewhere. The loss of revenue affected major customers such as the White Pass and Yukon Corporation Ltd. and Yukon Electric. Numerous small businesses could no longer afford to keep going once spending decreased.

The mine closure was just one event in a general recession. At that time, world metal prices were low and all the territory's mines had shut down. The White Pass & Yukon Route could no longer afford to run the railway. Operations were shut down in the autumn of 1982. Apart from a summer tourist operation out of Skagway, the railway has been closed ever since.

Despite the loss of 200 jobs and a payroll of nearly \$9,000,000, the closing of Whitehorse Copper went largely unremarked except by its employees (Holway, 1983). For the better part of fifteen years, Whitehorse Copper had been the largest employer in Whitehorse outside of the government. By that time, however, many Whitehorse residents tended to overlook the mine closest to home. One explanation was that the mine had been overshadowed by the economic might of Faro's Cyprus Anvil operation during the good years. In a newspaper interview conducted shortly before the mine closed down, chief geologist Dave Tenney spoke of this situation:

*I think we've been blindly ignored by the population of Whitehorse who don't hear or see us. Sometimes they don't even know we exist. The loss of Whitehorse Copper is going to hurt the economy of Whitehorse* (Yukon News, Oct. 1982).



## PERSONALITIES: THE LATER YEARS

As with many large mines, Whitehorse Copper had a constantly changing labour force of workers who hired on for a short time then moved along. The mine also had a stable core of workers who stayed at Whitehorse Copper for most of the life of the mine. Many people could be mentioned in this section as contributing to the development of the mine and its successful operation. What follows is a representative sample of a just few of these individuals.

### **J. A. Janssens**

Joe Janssens was raised in south-western British Columbia, graduating in 1969 from the University of British Columbia with a Bachelor of Applied Science (mining) degree. From 1969 until 1971 he worked for Anglo Rouyn Mines Ltd. in La Ronge Saskatchewan. He joined Whitehorse Copper in 1972. There he served as shift boss, mine captain, mine superintendent and, finally, as mine manager. He was the last to hold this position when the mine closed.

Janssens was one of the people who worked on adapting the vertical crater retreat method of mining to conditions at Whitehorse Copper. With Peter Percival, he published a report outlining how this technique was successfully used at the Whitehorse Copper underground mine (Janssens, 1981; YN, 29 Oct. 1982).

### **Janeane MacGillivray**

On the 18th of February 1976, Janeane MacGillivray made history when she became the Yukon's first female underground mine worker.

MacGillivray was born in Nanaimo in 1951. One of her major goals when she moved to the Yukon in 1974 was to get away from low paying traditional female "pink collar" work to a more lucrative "blue collar" job. She realized this ambition when she began work as a labourer at Whitehorse Copper a few months after moving north. After working her way up through a succession of jobs in the mine mill, Ms. MacGillivray decided it was time to take advantage of the new opportunities presented by legislative changes allowing women to work underground.

According to mining superstition, the presence of a woman underground was bad luck. Up until 1975, the *Yukon Mining Safety Ordinance* forbade women to work underground. Not only was this discrimination on the basis of sex, it also prevented women from applying for the lucrative "bonus" jobs underground. Trudy Vanderberg, an expeditor with Whitehorse Copper, worked with the Yukon Status of Women and Faro MLA Stu McCall to have the legislation changed. On March 26th, 1975; the Yukon Legislature amended the ordinance to allow women to work as underground miners.

During her two years underground, Janeane MacGillivray worked as a skip tender, in charge of transporting ore to surface; a rock breaker operator, running a machine that reduced large chunks of ore into more manageable pieces; and as a production driller operating a ring drill and a bar and arm drill. After leaving the

mine, she worked for several years in another non-traditional occupation, as a carpenter. MacGillivray considers herself a pioneer. By showing that women could do a good job in what was once considered "men's work", she encouraged other companies to hire women for non traditional work; and by her example, inspired other women to apply for these types of jobs (MacGillivray, 1993; Yukon, 1968).

### **Peter Percival**

Peter Percival was one of the last people to work in the Copper Belt. He graduated with a Bachelor of Science in mining engineering from the University of Alaska in 1969. The following year he began work for New Imperial Mines, the forerunner of Whitehorse Copper Mines Ltd. Originally hired as a geologist, Percival worked in a number of positions from miner to shift boss to project engineer, blasting engineer and, finally, mine engineer.

Percival was one of the people responsible for the successful application of the "vertical crater retreat" method of underground mining at Whitehorse Copper. As part of his job, he did feasibility studies on re-opening the pits at the end of the mine's life when the price of copper was rapidly falling.

When the mine finally closed in 1983, Peter Percival supervised much of the abandonment and was one of the last people laid off (Janssens & Percival, 1981; Percival, 1993).

### **Arnold Pitt**

Arnold Pitt was an engineer and a former professor of physics at the University of Toronto. He joined the New Imperial Mines organization in April 1962. The following December, Pitt became president of the company, a post he held until 1969.

Pitt is generally credited with re-energizing the company and obtaining the investment capital necessary to create a working mine (*Whse. Star*, June 1967).

### **Aubrey Simmons**

Aubrey Simmons had been a Yukon resident since he was a toddler. After serving in World War I, Simmons had a varied career that included working as a telegrapher, collector of customs, riverboat purser, and juvenile court judge. In 1949, Simmons was elected as the Liberal Member of Parliament for the Yukon-Mackenzie district. Simmons was the Yukon's MP until 1958 when he was defeated by Conservative candidate Erik Neilson. Simmons left the Yukon in 1959 and was about 80 when he died in 1979.

In September 1954, Aubrey Simmons, incorporated a company entitled Imperial Mines and Metals Limited. The company acquired several claims in the Whitehorse Copper Belt through staking, purchase or option. This company and its claims later became New Imperial Mines, the firm which established the copper mine twelve years later. Simmons was an honoured guest at the grand opening of the copper mine in 1967 (*Whse. Star*, June 1967, 3 Dec. 1979).

### **Roy Watson**

Roy Watson started work for New Imperial Mines in 1966 as a welder, during construction of the mill. By the time the mine closed, he had the most seniority of all staff employees and only one person had a longer service record.

Watson was instrumental in forming the Steelworkers Local 926 in 1966-67 and, as president, negotiated the first union contract at Whitehorse Copper. In 1973, he was appointed shop foreman, thus becoming management and thereafter sitting on the other side of the table from his union brethren (YN, 29 Oct. 1982).

### **Paul Wray**

Paul Dennis Wray was born October 6th, 1945 in Noranda, Québec. He studied at the Haileybury School of Mines in Northern Ontario before coming to the Yukon in 1965. In 1967, he began working for New Imperial Mines where he remained until 1981, the year before the mine shut down. During his time at the mine, Wray worked at a variety of jobs above and below ground.

Owner of the Rock Shop, Paul Wray is a historic mining aficionado. Through his explorations and research, he has developed an intimate knowledge of most of the copper belt. He was instrumental in the efforts on the part of the Yukon Historical & Museums Association and the Government of Yukon to protect the mining heritage of the Whitehorse Copper Belt (Wray, 1993; Yukon, 1985).

#### IV: THE AFTERMATH

Gradually, the buildings and structures associated with the older mines were removed or destroyed. In the interest of public safety, many of the unused shafts were fenced off and, eventually, filled in. In the 1980s, this process accelerated rapidly and entire mining sites were levelled.

In 1982, shortly after the closure of Whitehorse Copper, some groups and individuals, including former Whitehorse Copper employees, became concerned about the future of the copper belt. More particularly, they were interested in protecting the historic remains in the mining district before they were destroyed. There was good cause for concern on their part. As part of the legal abandonment procedure, Whitehorse Copper was required to remove anything that might prove a potential public hazard on their properties. Unfortunately, this was taken to mean any buildings or features related to the mines, including the shafts themselves.

The Government of Yukon's Heritage Branch, in consultation with the Yukon Historical & Museums Association, entered discussions with Whitehorse Copper and their parent company, Hudson Bay Mining and Smelting. Finally, in 1985, the Copper King, Copper Queen, Tamarac and Carlisle properties were leased to the Government of Yukon for a ten year term. The main points of the agreement were that, during this time, the territorial government would assume responsibility for public safety on these properties and develop them for heritage purposes. If they failed to accomplish these objectives within five years, the lease could lapse (Government of Yukon, Department of Tourism file # 4057-10-75).

Nothing was done to protect or develop the historic remains on these properties with the result that the claims lapsed to Hudson Bay Mining and Smelting in 1990. As part of the reclamation, the structures remaining on the sites were destroyed by the Mining Inspector's office (Wray). Other than the War Eagle open pit mine, which saw reuse as the city garbage dump, most of the other copper belt properties were sealed and levelled in the cause of public safety. At the former Whitehorse Copper Mine site, the dried up tailings pond sends great clouds of tailings dust into the air on windy days.

Copper mining helped to build the town of Whitehorse, especially the transportation infrastructure. At its peak periods, the industry infused the Whitehorse economy with substantial amounts of capital and employment. Very little has endured to remind us of the historic mines on the Whitehorse Copper Belt. The buildings are gone, the machinery buried or hauled away, even the shafts have been filled in. About all that remains is a legacy of names like Porter, McIntyre, Grainger, and Copper King. While there are considerable reserves of copper ore left in the copper belt, the world price of copper and current mining technologies do not allow for profitable extraction of the metal. For the foreseeable future, activity has ceased on the copper belt.

## ACKNOWLEDGMENTS

Several individuals contributed to the process of converting me from a hardrock mining and geology illiterate to a beginner student with some rudimentary knowledge of these unfamiliar terminologies. In particular, I'd like to cite Janeane MacGillivray who shared her collection of clippings and photos, as well as her memories; and Paul Wray, who taught me much about early and contemporary mining methods on the copper belt. Peter Percival and Randy Clarkson passed on many interesting Whitehorse Copper anecdotes via telephone interviews. The team producing the geological study of the copper belt, Rick Diamond, Joanne Falkiner and Gordon MacKay, provided many explanations and translations of unfamiliar terms. As always, the staff at Yukon Archives were of great assistance. Project manager, Brenda Carson, was both helpful and flexible. Brenda and Joanne Meehan of MacBride Museum had the brilliant idea of interpreting Whitehorse mining history as part of their educational programming. My partner, Rob Ingram, handled the graphics, tidied text, wrote when I ran dry and held things together during the annual deadline crisis. Any errors are my sole responsibility. Many thanks to you all.

H. Dobrowolsky

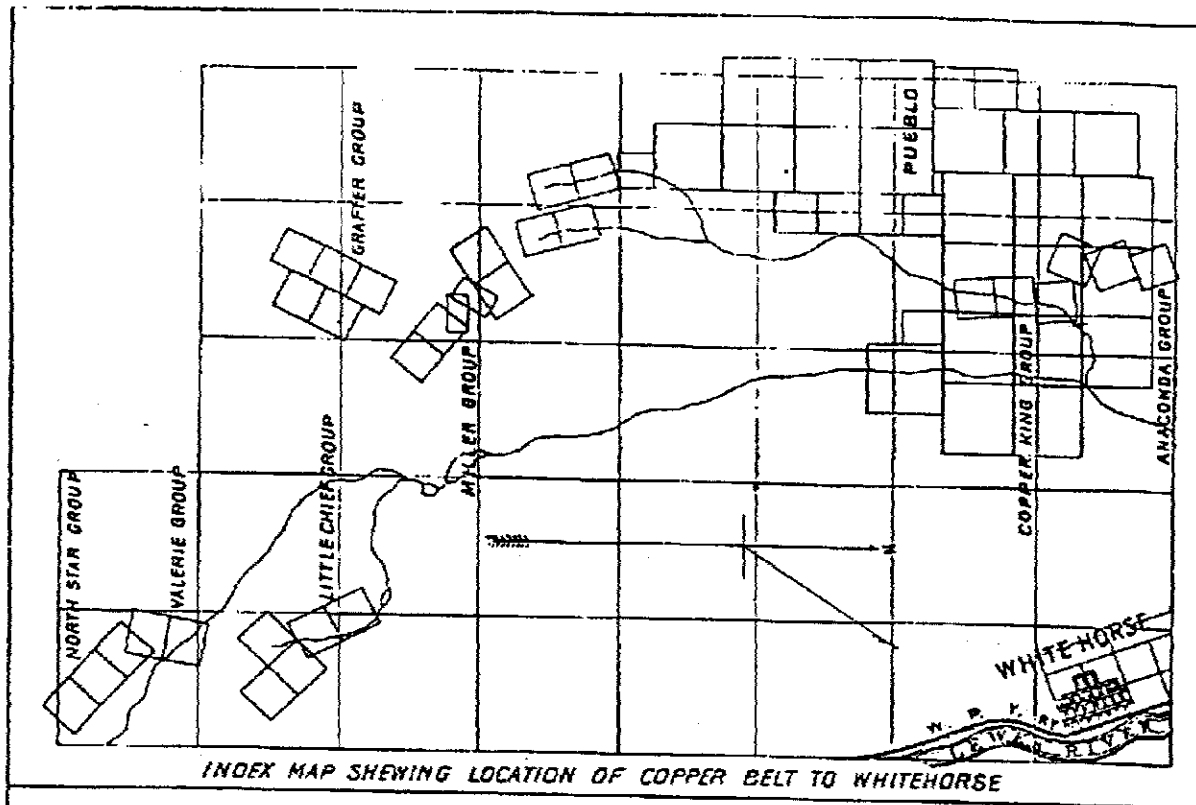


Figure 1. Early plan of the copper belt and major claims in relation to Whitehorse.  
 (From: *Plat of Whitehorse, ca. 1900*; source: YRG I, Series 1, vol. 13, f. 2788.)

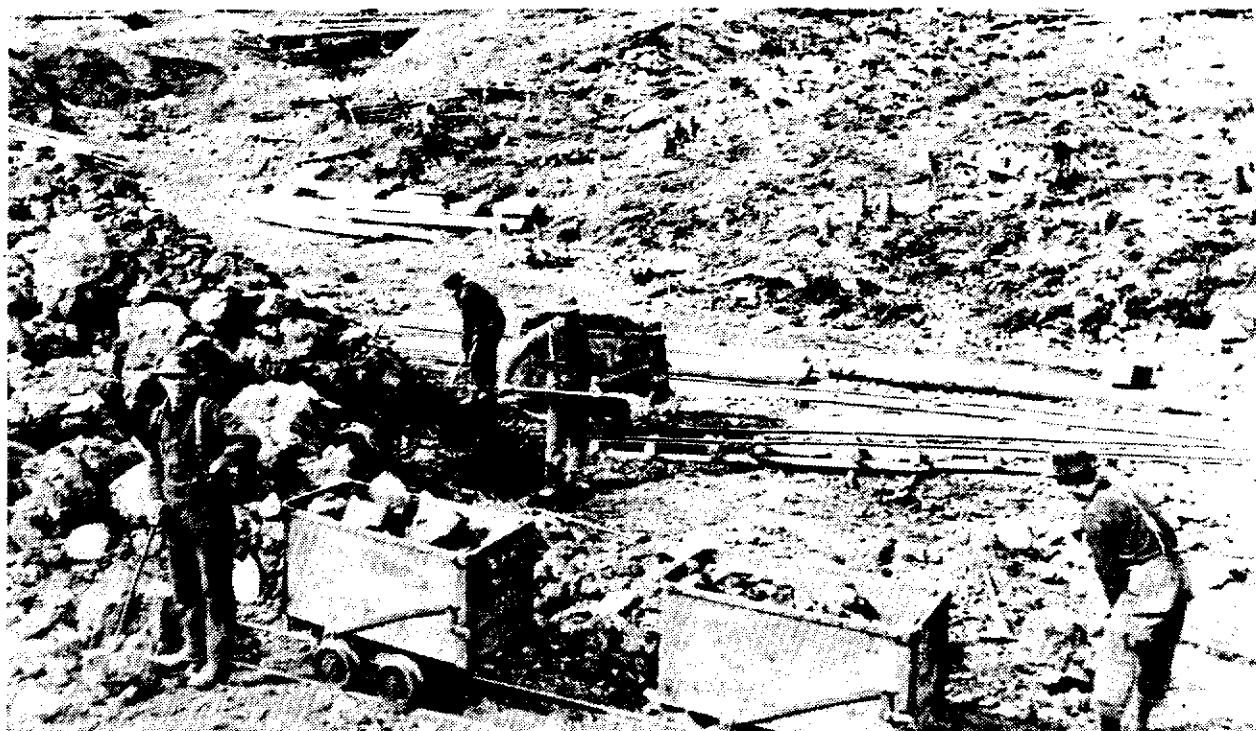


Figure 2. The open pit, Pueblo Mine, 1913.  
(YA/MM Coll., 83/08, #11.)



Figure 3. White Pass and Yukon Railway ore cars at the Pueblo  
Mine, ca. 1912.  
(YA/MM Coll., 83/08, #5.)



Figure 4. Mine manager's house at the Pueblo Mine, ca. 1920s.  
(YA 5661/MM Coll.)



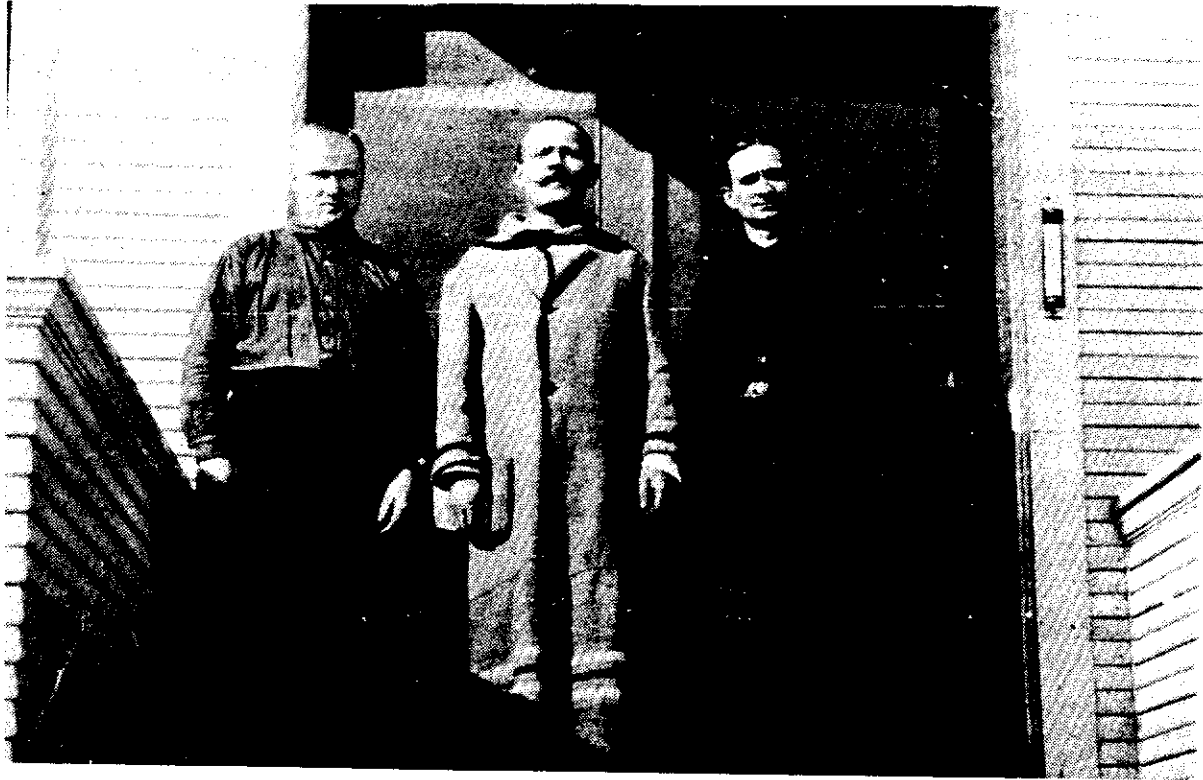


Figure 5. "The three miners who were entombed in the Pueblo Mine near Whitehorse. They were underground 86 hours while a tunnel 81 feet long was driven through the solid rock. Photo taken at Whitehorse hospital...April 1st, 1917."  
(YA/MM Coll.,83/08, #16.)

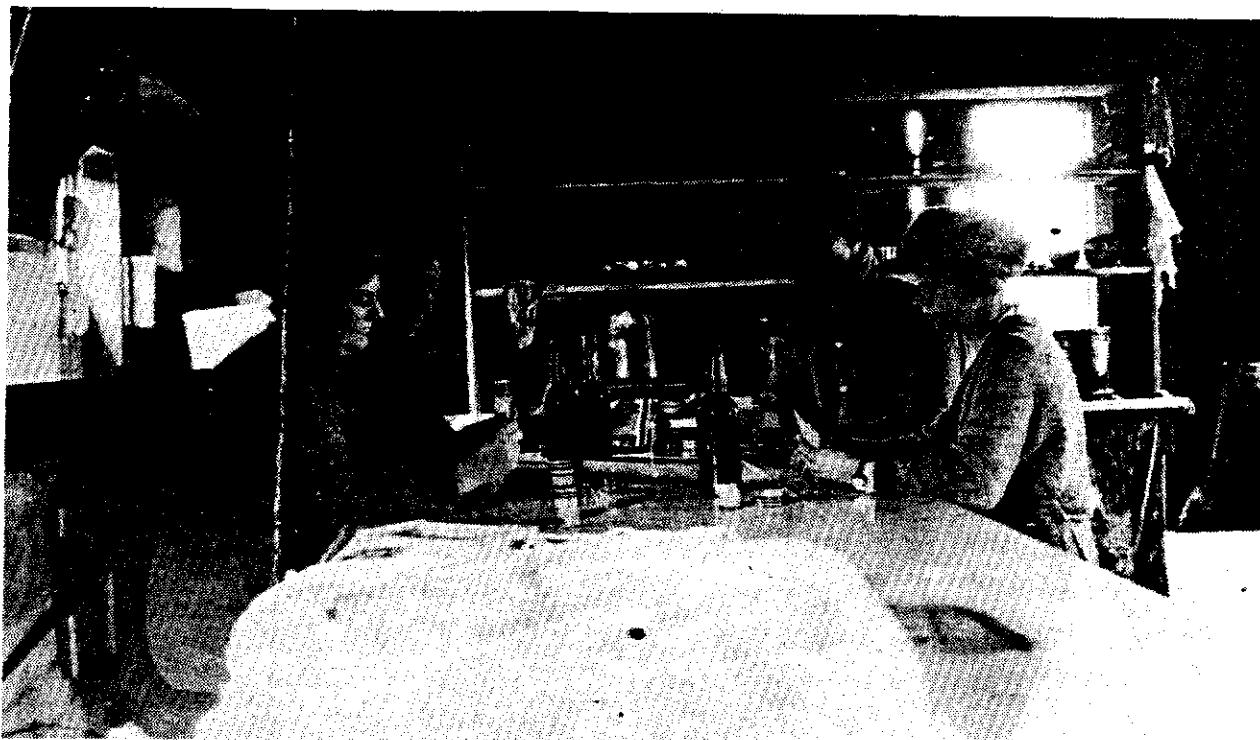


Figure 6. Enjoying a game of cards in a cabin, possibly at the Grafton Mine, 14 May 1922. L-R: Lillian Harbottle, Jan Vinal, Claude Tidd & ?. (*YA 7204/Tidd Coll.*)

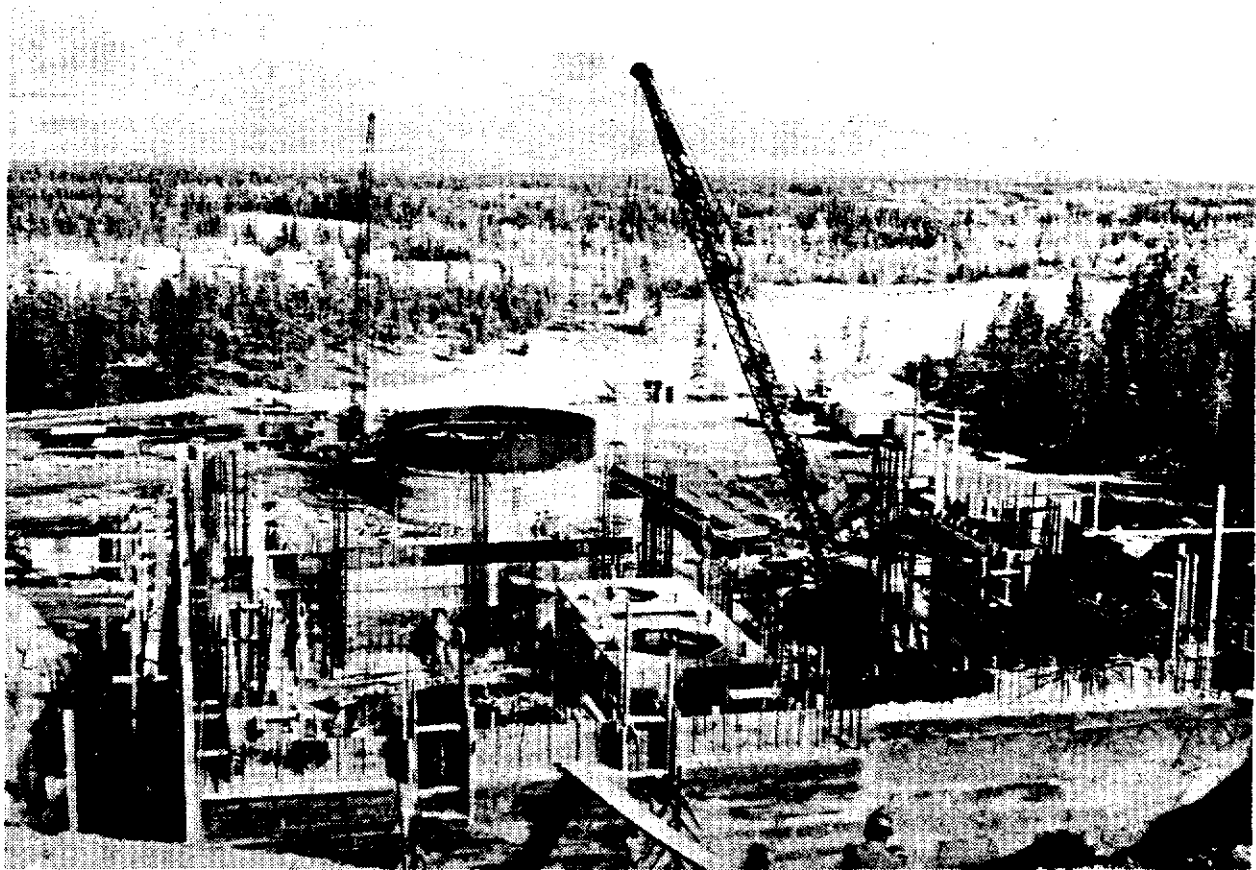


Figure 7. New Imperial Mines fine ore bin and mill under construction, 1966. (*YA/Whitehorse Star*, 82/563.)

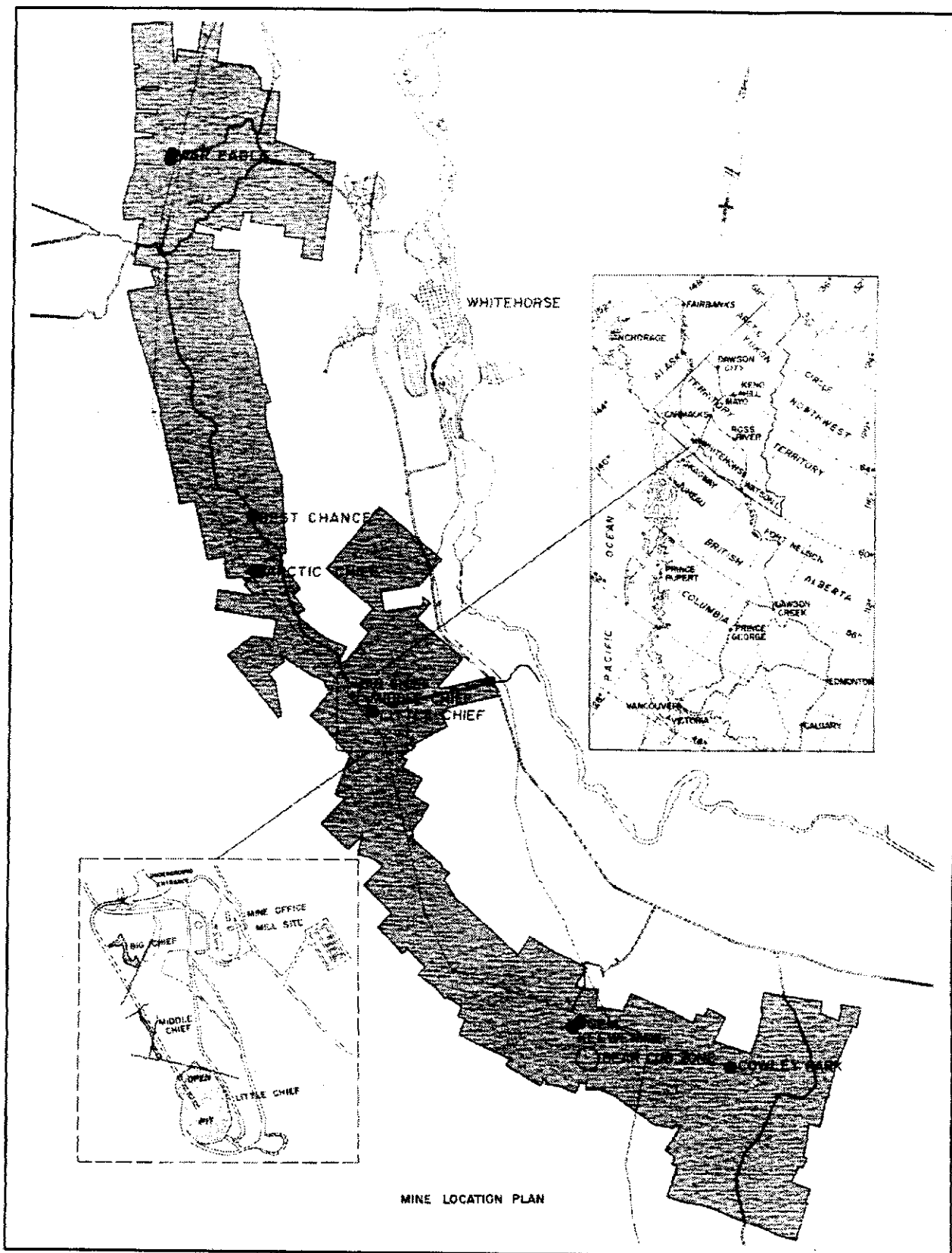


Figure 8. Whitehorse Copper Belt with inset showing New Imperial Mine Site.  
 (from New Imperial Mines Ltd., 1970 Annual Report.)

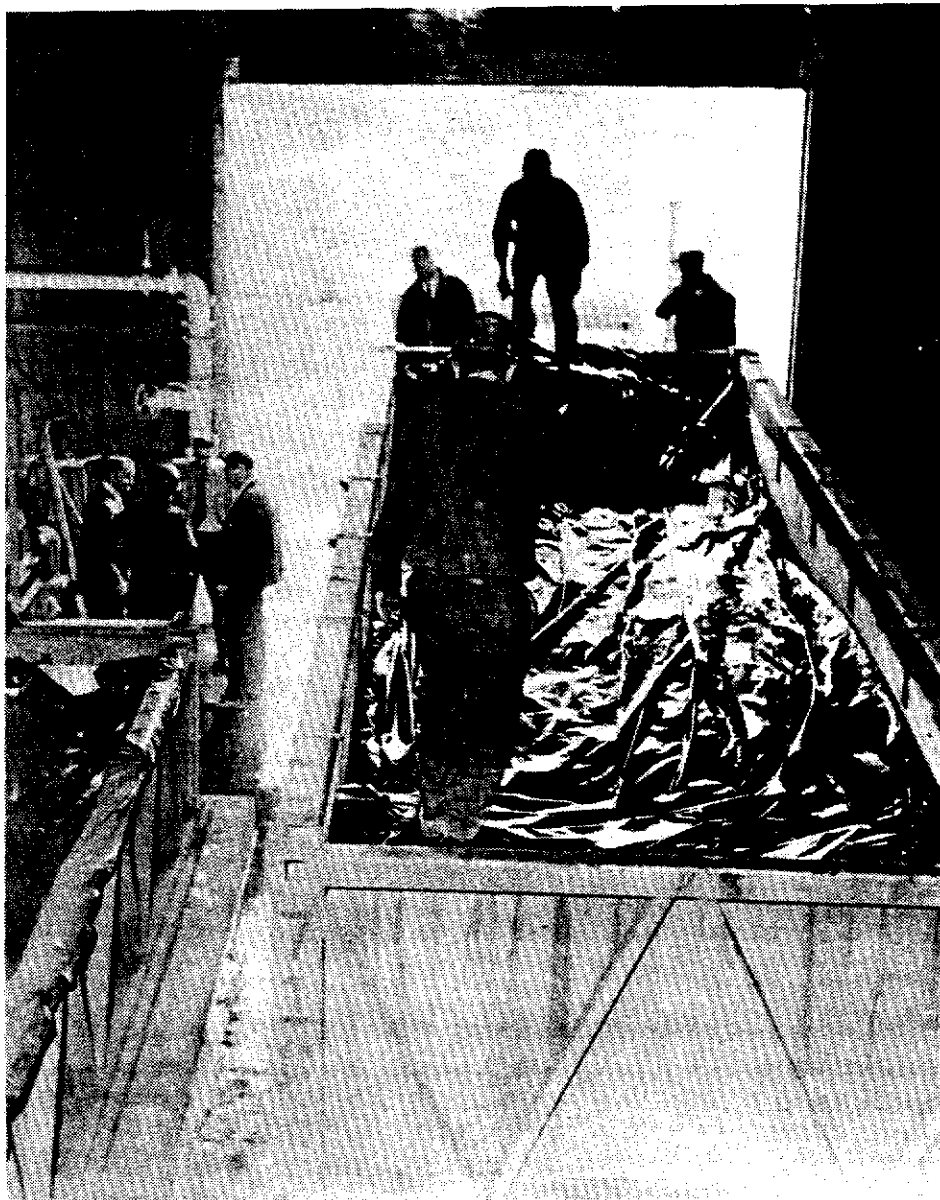


Figure 9. Copper concentrate being sealed in White Pass containers. (YA/Whitehorse Star, 82/563.)

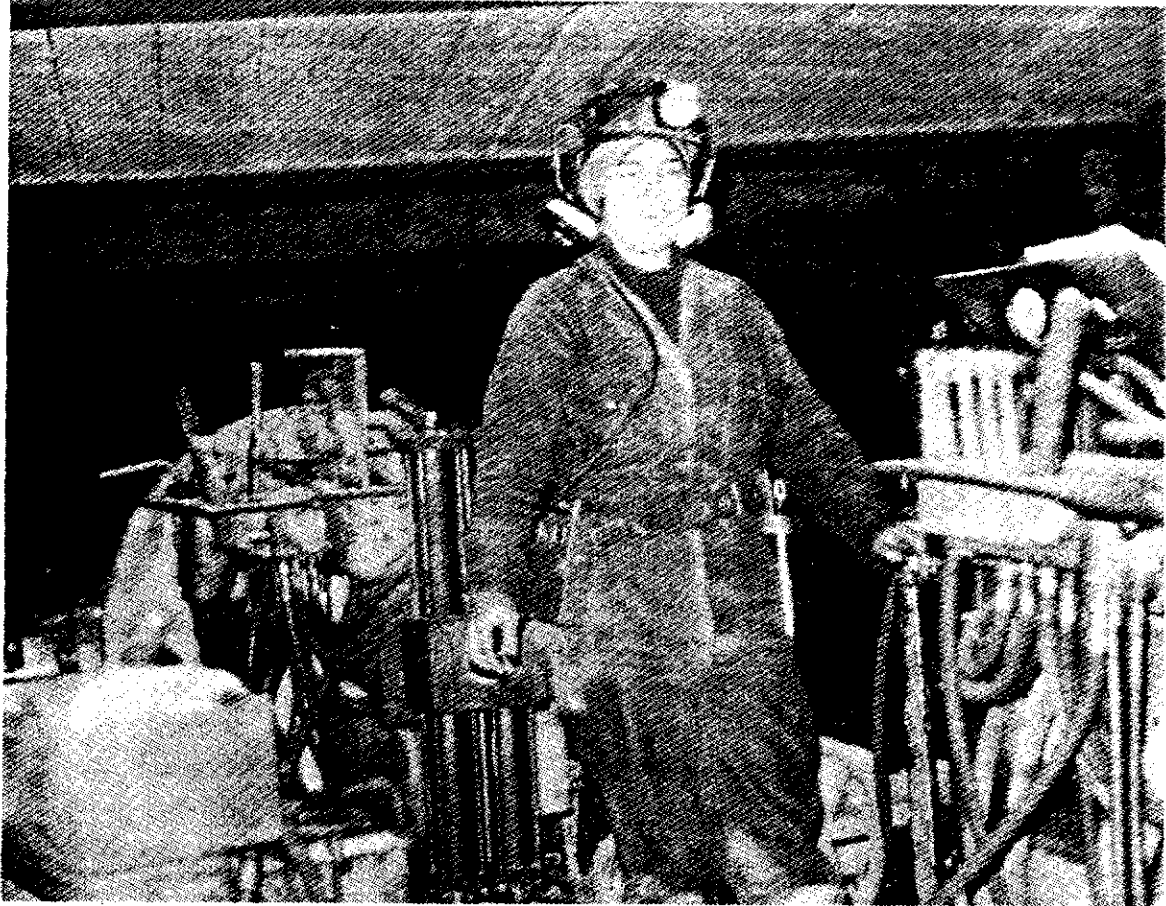


Figure 10. Janeane MacGillivray with "Number 68", a long hole or ring drill used in production drilling. (*J. MacGillivray photograph.*)

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