

CARCROSS WATERFRONT RESEARCH PROJECT

DEPARTMENT OF RENEWABLE RESOURCES

BY
Helene Dobrowolsky, Midnight Arts

with contributions from
Christopher Andreae, Historica Research Limited

prepared for

Department of Justice
Government of the Yukon

February 1997



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Cover photo: Carcross waterfront in September, 1950. The tie treatment plant is at the top right. National Museums of Canada 571-625.

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I am indebted to several people for their contributions to this report. Dave Neufeld, the Yukon and Western Arctic Historian for Parks Canada, supported this project and convinced the working group members that a historian could be useful to their investigations. The working group members: Harold Gatensby, Joe Ballantyne and Bengt Pettersson were all most helpful. Harold helped steer me through the Carcross interviews and shared his personal recollections of the site. William Dickson, Tim Dowd, Norman James, Bobo Larocque and Kelly Ogle provided valuable information on the tie plant operations. Mr. Dickson also helped me out when I was researching the Carcross Railway Station six years ago and I have drawn on some of that information for this report. My colleague Chris Andreae contributed to the section on railway tie treatment methods elsewhere in the country and the corporate history section. Loree Stewart of Heritage Branch gave me access to her research material on the Carcross area. The staff at Yukon Archives, particularly Heather Jones, were of great assistance during my research at that institution. Laurie Henderson, the project manager, gave me good advice and ensured the project stayed on track.

Thank you all. This report was prepared according to accepted historical research standards and to the best extent of available information. As neither the historical record or people's memories are comprehensive, there may be some gaps in the information.

Helene Dobrowolsky
February 1997

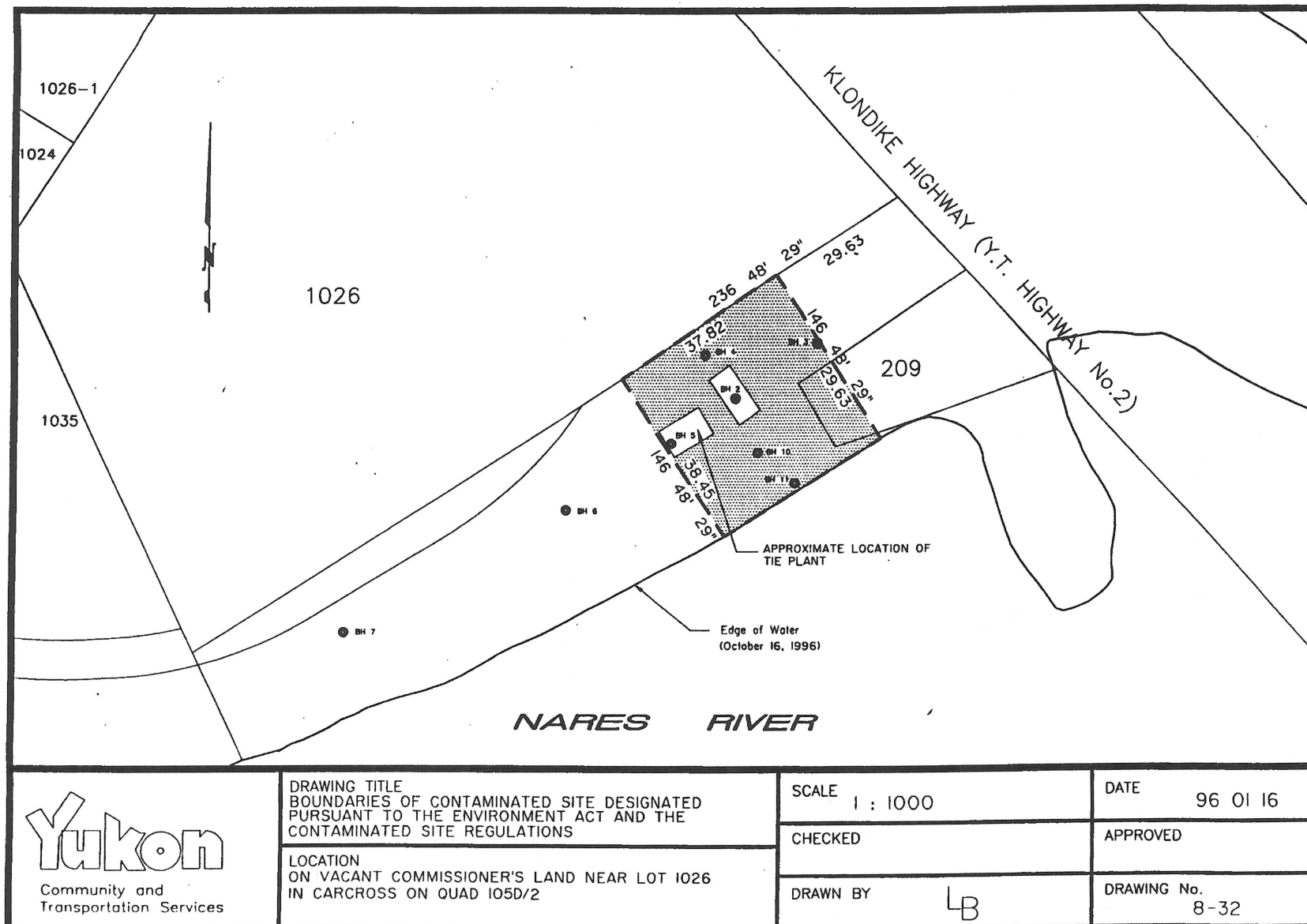


Figure 1

CARCROSS WATERFRONT RESEARCH PROJECT

1.0 INTRODUCTION

A Yukon government lot on the Carcross waterfront, formerly the site of a railway tie treatment plant, was found to be contaminated with pentachlorophenol and petroleum products. A working group was formed to deal with the problem. Its members included representatives from Environment Canada, Indian and Northern Affairs Canada (Water Resources & Contaminant Specialists), Carcross Tagish First Nation, and Yukon government members from Community & Transportation Services, Health & Social Services, and Renewable Resources. The site was formally designated a contaminated site under section 114 (2) of the Yukon Environment Act on February 7, 1997. The legal site description of the designated area located within Quad 105 D/2 is as follows: Vacant Commissioner's Land, bounded by Lot 1035 to the West, Lot 1026 to the North, Lot 209 and the South Klondike Highway to the East, and the Nares River to the South.¹ The map on the opposite page shows the contaminated area (*figure 1*).

The discovery of the contamination raised a number of important questions. What were the sources of the contamination? What contaminants had been used in the area in the past? How long had the contaminating activity taken place? Who was responsible for this activity? Were there other possible sources of contaminants in the immediate vicinity? What was the history of ownership, occupation and use of the site? Given that connections had been made with a former tie treatment plant, how did the plant operate and how did these operations fit into the context of the chemical treatment of ties elsewhere in Canada and the United States. It was determined that these questions could best be addressed by an historical study of the site. In late January the consultant, Helene Dobrowolsky of Midnight Arts, was contracted to investigate these issues. This report, based on archival and oral sources, is intended to answer these questions as fully as possible.

While this study does discuss the entire south shoreline of Nares River, particular attention has been paid to the former tie plant site. During planning for waterfront development by the Carcross Tagish First Nation, contaminants were found here. A knowledgeable member of the First Nation identified the site of the former tie plant for chemical testing. Based on the results of those tests, it became important to identify the sources of these particular contaminants. This does not mean that there are not other areas of potential concern within the waterfront area.

Note: In common with most long time Yukoners, I frequently use the term White Pass. The term is a colloquial one and was coined during the days when the White Pass & Yukon Route was one of the Yukon's largest employers and had a great impact on the territorial economy. It doesn't refer to a specific company but rather is a handy short term to refer to one or all of the many historic operations of the White Pass and Yukon Corporation Limited, be they rail, trucking, land sales or navigation. HD

1.1 Methodology

As the first stage in this research, I checked archival records. At Yukon Archives, I reviewed maps and photos of the site, and checked government and White Pass & Yukon Route corporate records regarding site use and ownership. I reviewed photos and maps available at Heritage Branch, these had been compiled in connection with previous research on the *S. S. Tutshi* and the Carcross Railway Station. I also reviewed material already collected by task force members. This included aerial photos, correspondence, land ownership correspondence, some notes on tie plant operations, names of potential informants and the contamination assessment report prepared by EBA Engineering Consultants Ltd. with the results of their tests on the former tie plant site.

Finally, I interviewed six informants with knowledge of the tie plant, three in Whitehorse and with the help of Harold Gatensby, two in the Carcross area. Mr. Gatensby also shared his personal recollections of growing up in the immediate area. Together, they provided a good picture of tie plant operations in the early years and in the final year of operation. In three cases, I followed up the original interviews with a series of follow-up questions.

Chris Andreae, a specialist in industrial history from Ontario, did a literature review on the history tie plant treatment procedures elsewhere in Canada and in the U.S. to provide a context for the type of tie treatment carried out in the Yukon. He also assisted with the corporate history portion of this report.

2.0 SITE OWNERSHIP OVERVIEW

The shores of the Nares River were important to the Tagish and Southern Tutchone First Nations people in their annual round of fishing, hunting and gathering. The narrows was the crossing place for a large herd of caribou during their annual range migration. Hence the early name of Caribou Crossing, later shortened to Carcross. The waters of the nearby lakes abounded with lake trout, whitefish, inconnu, burbot and herring. The nearby mountains provided sheep and goat habitat. The land at the narrows was a major camp for the spring herring fishery and fall caribou migration as well as other hunting and fishing activities. According to archaeological evidence, people occupied this site for thousands of years.² The Carcross waterfront is subject to negotiations as part of the land claim of the Carcross Tagish First Nation. While this claim is acknowledged, for the purpose of this report I will be discussing land tenure solely as it relates to past industrial use of the site.

The present-day community of Carcross owes its existence to the construction of the White Pass and Yukon Railway. The narrow gauge railway between Skagway and Whitehorse, a distance of 110.7 miles, was built in just two years (1899-1900) over some of the most challenging terrain in the world. This feat has been officially recognized as a world class engineering achievement. Most of the rail line follows a traditional First Nations travel route. For centuries, the Tlingit people of the Alaskan panhandle crossed this mountain pass to trade, visit and inter-marry with the Tagish and Southern Tutchone people of the interior.

Construction of the railway proceeded in sections depending on financing and logistics. Once a stretch of railway was completed, it could freight materials for the next section. The first phase from Skagway to Bennett City, was completed in July 1899. The connection with the lake steamers of Bennett Lake meant that construction supplies and rolling stock could be transferred from rail to steamers and barges bound for a new work camp at the north end of Bennett Lake. As well as marking the right of way, White Pass engineers and surveyors identified sites for work camps, railway stations, trainyards, and in two cases, even townsites.

In March 1899, the chief engineer of the White Pass and Yukon Railway, E. C. Hawkins, directed his assistant John Hislop to proceed to the north end of Lake Bennett to survey the large parcel of land required for railway yards, a depot, and a good steamboat landing, "all within the grounds to be occupied by the railway." He also added the following directive: "If there is available ground for a townsite adjoining the track I think it would be well to have it surveyed and filed upon."³

The site chosen by Hislop was on the north side of the narrow river connecting Lake Bennett to Nares Lake. He also selected a 160-acre parcel of land on the south side of the river under the ground where the track and bridge crossed the river. White Pass put in an application to the Canadian government for 640 acres of land. The initial survey was conducted by R. Joue for the British Mining, Trading and Transportation Co. on May 5, 1900. This property was laid out into four large blocks of property later known as lots 1 (160 acres), 2 (160 acres), 3 (110 acres), and 4 (160 acres) all within the former Group No. 6.⁴ On July 21, 1899, the Canadian government

issued Order-in-Council P.C. 1581, authorizing free grant of that portion of the land applied for actually required for railway purposes, dockage and sidings and to provide for the sale of the remainder of the land to the Company at the price of \$10 per acre.⁵ [See section 3.0 for an outline of the company structure and ownership.]

The townsite was later surveyed within the western end of lot 2. One-third of the land was set aside for federal government use as required by law. Most of the land within the townsite along with other assorted parcels were sold by the company's land division, the British Yukon Land Company Ltd.⁶ The railway station, trainyards and future site of the tie plant were all within the southeastern portion of lot 2 along the south side of the Nares River. Land along the waterfront fell within the crown reserve, the 100-foot strip extending inland from the ordinary high water mark. Initial investigations do not show that White Pass ever made a separate lease arrangement for this property with the federal government as they did in Whitehorse.

During World War II, Carcross became an important depot and work camp for American sponsored defence projects. On October 1, 1942, White Pass leased the railway and its structures to the American Army for the duration of the war. This also included the use of the railway right-of-way. This agreement was covered under Order in Council P.C. 10067, dated 6 November 1942.⁷ The U.S. government also leased several parcels of land for work camps, pumping stations, offices and various other purposes. Most of these latter leases were renewed from year to year for the nominal sum of one dollar. In Carcross, these parcels included a tract of land north of the railway depot (covered by Permission to Occupy 106), the right of way for the Tagish and Carcross Roads, a tank farm and pump station near Carcross. None of these tracts specifically included the eastern waterfront property although that would have been included as part of the railway lease.⁸ With the exception of the right-of-way for the newly-built roads, these lands were transferred back to White Pass after the war.

On February 1, 1950, the status of White Pass' use of the Carcross waterfront was formalized when a "Permission to Occupy No. 154" was granted to the British Yukon Railway Company for the Carcross Waterfront for an annual rent of one dollar. This arrangement was to be effective as long as "this foreshore is usable by the British Yukon Railway Company for the general purposes now used and as long as it is so used by that Company that all claims to lands under P.C. 1581 dated July 21, 1899, are [unreadable] satisfied."⁹

Five years later, this Permission to Occupy was replaced by Lease 154. This lease was issued under the authority of Order-in-Council P.C. 1955-1022. The lease was a 21 year term from February 1, 1955, again with the nominal rent of one dollar per year. The explanation for this revision is suggested in a letter written by the DIAND Supervisor of Lands to Commissioner James Smith several years later:

*At the time the original lease was issued the Company had no title to that portion of the r/w [railway] however by virtue of Order in Council P.C. 1955-1189 and subsequent Letters of Patent No. 147605 dated September 13, 1955, it now does.*¹⁰

In the mid 1960s, the Yukon government took an interest in the waterfront area covered by the White Pass lease. It was looking into developing a marina and parking site on the Nares River waterfront, east of the tie plant. (This site eventually became lot 209, shown on *figure 1*.) The government was also interested in acquiring the land under the beached sternwheeler, the *Tutshi*. Negotiations were prolonged and on occasion, lapsed for a few years at a time.

In November 1971, the company's river arm - the British Yukon Navigation Company - sold the sternwheeler *S. S. Tutshi* to the Yukon government for one dollar for development as a tourist attraction.¹¹ The following year, White Pass agreed to release the two parcels of land within Lease 154, provided that the company be given a readjusted lease for the remainder of the property under the same terms. There is no indication that this happened. In a July 1974 letter, a company solicitor mentioned that the users of the planned marina would be next to a company facility. James D. Piers wrote to Assistant Commissioner M. Miller:

*... I should mention that within fifty feet of the Marina Property is our works where newly cut railway ties are dipped in creosote for preserving and the smell of the hot creosote can be very obnoxious; ...*¹²

On July 3, 1975, under P.C. 1975-1509, there was a transfer to the [territorial] Commissioner of the administration of these lands, "subject to the condition that the Commissioner will retransfer to the Minister of Indian Affairs and Northern Development any unalienated territorial lands as may be required to satisfy and discharge obligations under Indian treaties." The land for the proposed marina site was designated as lot 209. The property around the *Tutshi* - still on ways on the waterfront - was designated as lot 210.¹³

In 1979, the South Klondike Highway opened to year-round traffic. Three years later, the railway closed down its service between Whitehorse and Skagway. The residents of Carcross were interested in taking steps to promote their community's historic attractions and encourage tourist traffic. The Yukon government became interested in developing the area around the *Tutshi* and building a visitor centre but were reluctant to do this until they acquired ownership of the property. In 1984, White Pass sold the newly-surveyed lot 1025 to the Government of Yukon for the Tutshi Interpretive Centre. This parcel included the *Tutshi* and a large area to the west and north for parking. The adjoining property, lot 1026 (immediately north of the tie plant), remained the property of the British Yukon Railway Company.¹⁴

The property underwent a further survey in 1994 when plans were made to reroute the main access route into town. The old lot 1025 became part of the somewhat larger 1035. The immediate area surrounding the *Tutshi* relic (the vessel and adjoining visitor centre having been destroyed by fire in 1990) was made a heritage reserve. The remainder was transferred to Tourism Marketing for a parking area. White Pass leased the train depot to the Dept. of Tourism for use as a Visitor Interpretive Centre in August 1991.¹⁵

3.0 CHRONOLOGY: WHITE PASS AND YUKON CORPORATION LIMITED

[compiled by Christopher Andreae of Historica Research Ltd. & Helene Dobrowsky]

1894 Dec. 14, incorporation of the British Columbia Development Association, Limited in London by a group of English capitalists interested in investment prospects in the Canadian west. (Minter, *White Pass: Gateway to the Klondike*, p. 34.)

1896 the syndicate advanced a small amount of money to Capt. William Moore to cut a rough trail a few miles out of Skagway.

1897 the syndicate followed this initial development work with the incorporation of two Canadian companies.

8 May - British Columbia-Yukon Railway Company incorporated in Victoria by the British Columbia Legislative Assembly (60-61 Victoria, Chapter 89; Minter, pp. 62, 369.)

29 June - act to incorporate the British Yukon Mining, Trading and Transportation Company passed by the Canadian Parliament. The section of track was presumably under a Dominion Charter due to the fact that a territorial government had not yet been organized. [Minter, p. 65, *Statutory History of the Steam and Electric Railways of Canada*]

The two companies were incorporated to build a railroad from the summit of White Pass to the trading post of Selkirk on the Yukon River. "The absence of enabling legislation providing for railroads in Alaska prevented the syndicated from obtaining a right of way between Skagway and the summit" (Bennett, p. 37).

1898 March, Close Brothers, an English financial house, appropriated the assets of the British Columbia Development Association, including the two railroad charters. (Bennett, *Yukon Transportation: A History*, p. 38)

- White Pass and Yukon Railway Company Ltd. organized in Great Britain; acquired the capital stock of the British Yukon Mining, Trading and Transportation Company.

[*Statutory History of the Steam and Electric Railways of Canada*]

29 March - Close Brothers obtained a West Virginia charter to build a railway between Skagway and the summit of the White Pass. (Bennett, p. 38)

30 July - The White Pass and Yukon Route, a general transportation company was organized by Close Brothers of London on 30 July 1898. (Bennett, p. 155)

Note: The White Pass and Yukon Route was not a corporate entity, but rather four local operating companies: one American and three Canadian. The U.S. company, the Pacific and Arctic Railway and Navigation Company was incorporated under the laws of the state of Virginia. The three component Canadian companies were the British Columbia-Yukon Railway Company, the British Yukon Mining, Trading and Transportation Company (also known as the British Yukon Railway Company) and the British Yukon Navigation Company. Until 1951, these four companies were subsidiaries of a parent English holding company, the White Pass and Yukon Railway Company Ltd. ** check how registered.

[Yukon Archives: White Pass and Yukon Route Corporate Records, acc. no. 82/451; also Bennett, p. 155 quoting: R. Dorman, *A Statutory History of Steam and Electric Railways of Canada* (Ottawa: King's Printer, 1941)].

1899 British Yukon Railway Company applied for 640 acres of land at Carcross for railway purposes, dockage and siding. Subsequent land transactions were handled by the British Yukon Land Co. The land under the former tie plant was occupied/leased by a sawmill from approximately 1900-1906. [Yukon Archives: White Pass and Yukon Route: Corporate Records accession #82/451]

1900 name of British Yukon Mining, Trading and Transportation Company changed to the British Yukon Railway Company. [*Statutory History of the Steam and Electric Railways of Canada*]

1942 White Pass and Yukon Railway was leased to the United States government for the duration of the war.

1946 wartime leases were cancelled.

1951 White Pass and Yukon Corporation Limited was incorporated by a Canadian charter; functioned as a holding company to acquire assets of the White Pass and Yukon Railway Company, including the ownership of the British Yukon Railway Company. This new company, incorporated 4 Sept. 1951, acquired entire outstanding capital stock of the four local operating companies on November 1, 1951, on which date it commenced operations. [Yukon Archives: White Pass and Yukon Route: Corporate Records accession #82/451]

1973 In early 1973 Federal Industries Ltd. started to acquire shares in White Pass and Yukon Corporation Limited; Federal Industries incorporated 1929 as Federal Grain, Limited, in 1972 sold all assets in grain business and invested in industries with an emphasis in transportation and metals, corporate head office in Winnipeg. [Financial Post Co., *Historical Reports: Federal Industries Ltd., Historical Reports*, 1995]

1976 Federal Industries Ltd. purchased all of the common shares of the White Pass and Yukon Corporation Limited. [White Pass & Yukon Annual Report]

1995 White Pass Transportation Limited is a holding company of Federal Industries Ltd. and operates truck and rail facilities, distributes and sells petroleum products in Alaska and Yukon, and operates the current tourism operation, the White Pass & Yukon Route Railway. [Financial Post Co.; *Historical Reports: Federal Industries Ltd., Historical Reports*, April 1995]
June - Federal Industries Ltd. changed their corporate name to Russel Metals Inc.
(Chris Andreae, personal communication, 25 Feb. 1997, after contacting executive office in Toronto.)

4.0 SITE USE HISTORY

4.1 The Early Years, 1899 – 1930s



Figure 2: Panorama of tent community from across the river, showing King's Mill under construction at right. June 1900. YA 4667/ Barley photographer

After completion of Skagway to Bennett section of railway in July 1899, a major construction base camp was established in Carcross for building the 41-mile Carcross to Whitehorse extension. Half of the teams and wagons were barged to Carcross from Bennett City. The remainder stayed behind to work on the Bennett-Carcross section along the eastern shore of Lake Bennett. By fall, the lake steamers and a 150 ton capacity barge built by Stikine Bill Robinson had delivered a huge quantity of supplies and equipment to Carcross including "an engine, train, coal, 18 miles of track and track iron."¹⁶

The transport of railway construction materials to the base camp at Carcross resumed the following spring. As soon as the ice went out on Lake Bennett, additional rails and other railway supplies were freighted from Bennett City. Another two barges had been built, each with a capacity of 150 tons. Four locomotives, a coach and a combination of 60 boxcars and flat cars

made the trip down the length of the lake. The crew worked feverishly with a total of 560 men working on the Whitehorse extension and 900 along shores of Lake Bennett.¹⁷

A crew of bridge carpenters built the railway swing bridge over the Nares River, constructed so that the middle section pivoted in order to allow steamers and other vessels to travel between Bennett and Tagish Lakes.

Photographs taken in June 1900 show a busy scene along the south shore of Nares Lake. The White Pass and Yukon Railway yards are occupied by a locomotive, box and flat bed cars, freight sheds, barges and supplies. Further down the waterfront going east, one can see ongoing construction of the King's Mill sawmill, owned by the Upper Yukon Consolidated Company. The boiler stacks rise through the buildings framed shell. A railway spur runs east to the site. By the time the railway opened, the mill was shipping lumber to the booming new town of Whitehorse.¹⁸

An insurance plat drawn by White Pass in 1900 and revised two years later shows the mill and associated structures as being on the "King Lease" occupying 3.1647 acres. Among many other smaller structures is a building labelled the 'Dominion Gov't. Telegraph Office' relocated from its original location on the south side of the narrows. Between the mill property and the railway station, are a number of other railway structures including a stock yard.¹⁹

By 1902, the mill was no longer operating and White Pass executives were gloomily assessing their chances of collecting unpaid rent. When another tenant took over the mill operations in 1903, a railway executive ordered enough rough lumber to cover the debt and issued a receipt for the outstanding rent. By 1906, the mill had been destroyed by fire and all milling operations on the site had ceased.²⁰

Little information is available about any activity on the site from the 1910s to the 1930s. According to one informant, for many years a large shed full of mining equipment stood in area where tie plant was later built. This had been ordered by a mining company from Atlin, shipped in by the railway, then the mining company never collected the gear. The shed was taken down some years before tie plant was built.²¹

4.2 World War II Defence Projects, 1942-1946

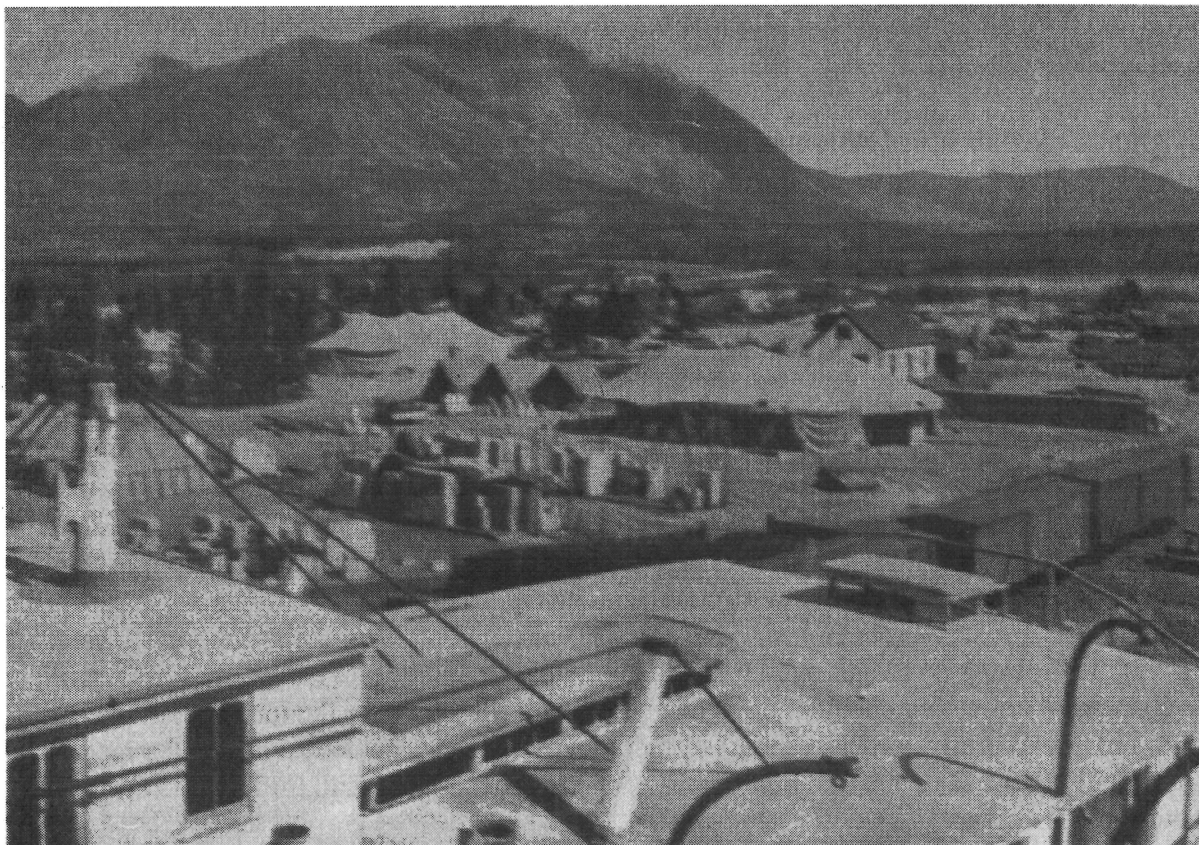


Figure 3: U. S. Army camp at Carcross, ca. 1942. Photo taken from the Texas deck of the steamer Gleaner. YA 609 I/Harbottle Coll.

The White Pass and Yukon Railway was considered such an important supply line for the Alaska Highway and Canol Pipeline Projects that the American Army leased the railway and its structures for the duration of the war for the sum of \$27,708,33 per month.²² Traffic increased from one or two trains per week in the prewar period to as many as 25 trains a day to carry the thousands of troops, civilians workers, as well many tons of heavy equipment and materiel. In the spring of 1942, 1200 black troops disembarked at Carcross to build a supply road from Carcross to Jake's Corner through Tagish.²³ In 1943, the contractor for the Canol pipeline, Bechtel-Price-Callahan, set up a large supply camp on White Pass property. Photos from the time, show large stacks of fuel barrels, pipe, and other materiel in the area north of the train station.²⁴

The 'Friendly Invasion' brought many changes including the modernization of facilities and services. The single wire telegraph line that had serviced the railway since its construction, was replaced by an eight wire telegraph/telephone system. Civilian contractors supplied many buildings with electricity and year round piped water.²⁵

4.3 The Tie Treatment Plant, ca. 1949-1975

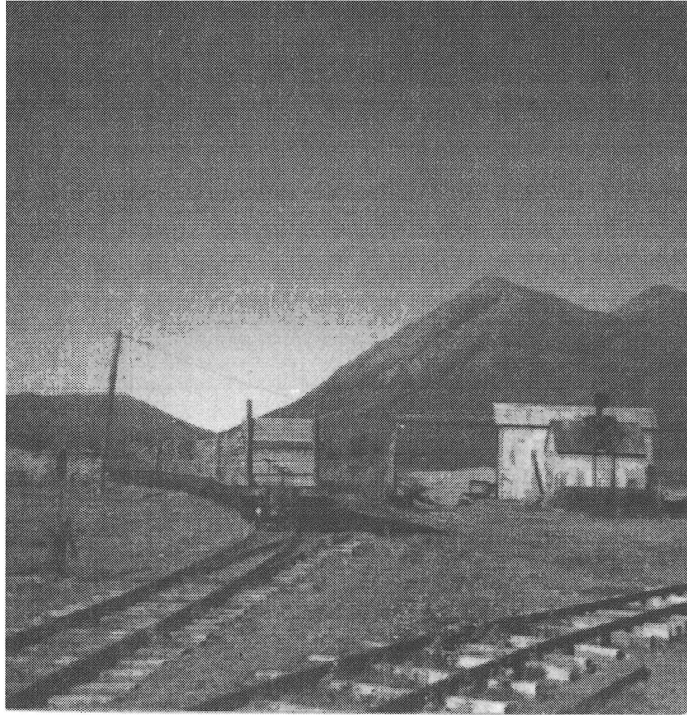


Figure 4: View of tie plant, boiler shed in foreground and flat cars loaded with ties looking northeast, 1975. Kelly Ogle photographer

Up until the late 1940s, the White Pass and Yukon Railway imported pre-treated ties from outside sources. These were shipped up the coast to Skagway. In the late 1940s, White Pass officials decided it would be more economical to order locally cut ties and build a plant to treat them.²⁶ The tie plant was built by a White Pass carpentry crew based in Skagway. This group of carpenters handled construction and maintenance of buildings, bridges and other structures along the length of the line. In later years, this work was handled by Canadian workers.²⁷

Initially, logs for the plant were cut on Taku Arm and milled at a sawmill at the mouth of Graham Inlet. The ties were then loaded on a barge which was pushed to Carcross by the sternwheeler *Tutshi*. In later years, ties came from a mill 35

miles south of Atlin run by Mannie Magnusson. Later the tie-milling contract was taken over by Gordon Yardley at Ten Mile Ranch. George Simmons and Gordon Yardley used to truck ties to the site.²⁸

For the first few years (late '40s/early '50s), Jack McMurphy was in charge of the plant, under contract to White Pass. It seems that the arrangement was that White Pass hired a contractor to handle the treatment using the White Pass plant on company land. This person in turn hired workers to work in the plant. The company supplied the ties and the chemicals used for treatment (see section 6.0 for more detail on tie plant operations).²⁹ The tie plant ceased operation in 1975 and in 1979, a White Pass railway section crew dismantled the structures.

5.0 CHEMICAL TIE TREATMENT PROCEDURES IN CANADA

- prepared by Chris Andreae of Historica Research Limited with H. Dobrowolsky

The chemical preservation of railway ties in Canada was not common until the 1920s. The abundance of suitable wood at low prices discouraged the use of more expensive, but longer lasting, treated ties. Even by the mid-1930s it was estimated that while 90 percent of the ties used in the United States were treated only 30 percent of those used in Canada were treated.³⁰

Given this trend in the use of non-preserved ties, it is quite likely that the White Pass and Yukon Railway would not have used treated ties before the 1940s. Even if they had, the small market for ties would have been filled by imported treated ties from southern British Columbia or the northwestern United States. Tie preservation plants were located at New Westminster and Vancouver by the mid-1930s.³¹

5.1 Process of Tie Preservation

5.1.1 Non-Pressure Process:

By the 1940s the chemical treatment of ties was done by one of two general methods: *pressure process* and *non-pressure process*. The pressure process provided the best chemical treatment of the ties but required expensive, specialized equipment. The non-pressure process was used at Carcross; presumably because it was cheaper.³² Although the pressure treatment produced better ties, the non-pressure process was still common in the 1940s. In 1946, there were 67 non-pressure plants operating in North America.³³

Several treatment techniques could be used within the non-pressure process. The Carcross plant used a method known as the *hot-and-cold-bath treatment*. This method produced the best penetration of the preservation chemicals into the wood and was considered equivalent to a mild pressure treatment.³⁴

The first step in treating the wood was to mill the timber to the size of the tie and then dry the timber. Although green wood could be used in some processes, the wood had to be dry for the hot-and-cold-bath treatment. The White Pass & Yukon ties were typically rough 6x8s, and were 6' 6" long and milled locally. Typically, the green ties were stacked on site the previous season, allowing several months for air drying.³⁵

5.1.2 Hot And Cold Bath Treatment

This method consisted of heating dry wood thoroughly in a preservation liquid and then either cooling it in the same liquid or transferring the wood to another tank containing a cold liquid. The air in the wood expanded and was forced out of the wood on heating. When the wood was cooled, the remaining air contracted and sucked in the liquid.³⁶ The cooling process was also necessary before workers were able to handle the hot ties.³⁷

5.1.3 Pentachlorophenol

Until the 1940s, coal tar creosote and zinc chloride were generally recognized as the standard tie preservatives. Overall, however, there was a general increase in the use of creosote, matched by

declining use of zinc chloride. Beginning in the mid-1930s, other chemicals began to be used as a cleaner treatment than zinc chloride. Pentachlorophenol (PCP), chromated zinc chloride, copper naphthanate, and Wolman salts were increasingly used.³⁸

Typically PCPs were used in a petroleum solution. Kerosene was the common solvent for non-pressure treatment methods.³⁹ The Carcross plant used diesel fuel. Although creosote has always been the most popular chemical for tie treatment, there is no oral or documentary evidence of its use at Carcross.

PCP's were first used in 1936 for non-pressure treatment of railway ties. This was followed in 1941 with the first large scale commercial pressure treatment.⁴⁰ It is not certain when PCP's were first used in the hot and cold bath treatment method. One article in 1949 mentions that "Dow Chemical carried out experiments on method of treatment with favourable results."⁴¹ One informant suggested that initially the Carcross tie plant only used diesel in its operations. It has been confirmed that PCPs were definitely being used by the early 1950s.⁴²

5.1.3.1 Pentachlorophenol Use in Carcross Tie Plant

The Carcross plant appears to have used diesel and pentachlorophenol throughout its operating history. Pentachlorophenol was considered a valuable preservative chemical because of its low solubility in water and low vapour pressure. It was also one of the cheapest wood preservatives.⁴³ According to one informant, **Lauxtol** was the brand name of the PCP used at the tie plant in the early 1950s.⁴⁴ **Lauxtol** and **Lauxtol A** were commercial brand names.⁴⁵ During its final year of operation, the tie plant was reportedly using the **Pentox** brand of PCP.⁴⁶ This particular wood preservative product was used widely for domestic purposes, although there was one commercial product. It contained the following proportion of active ingredients: PCPs - 5%; creosote - 2%; copper naphthanate - 2%; and zinc naphthanate - 1%.⁴⁷

6.0 CARCROSS TIE PLANT OPERATIONS

6.1 The Structures

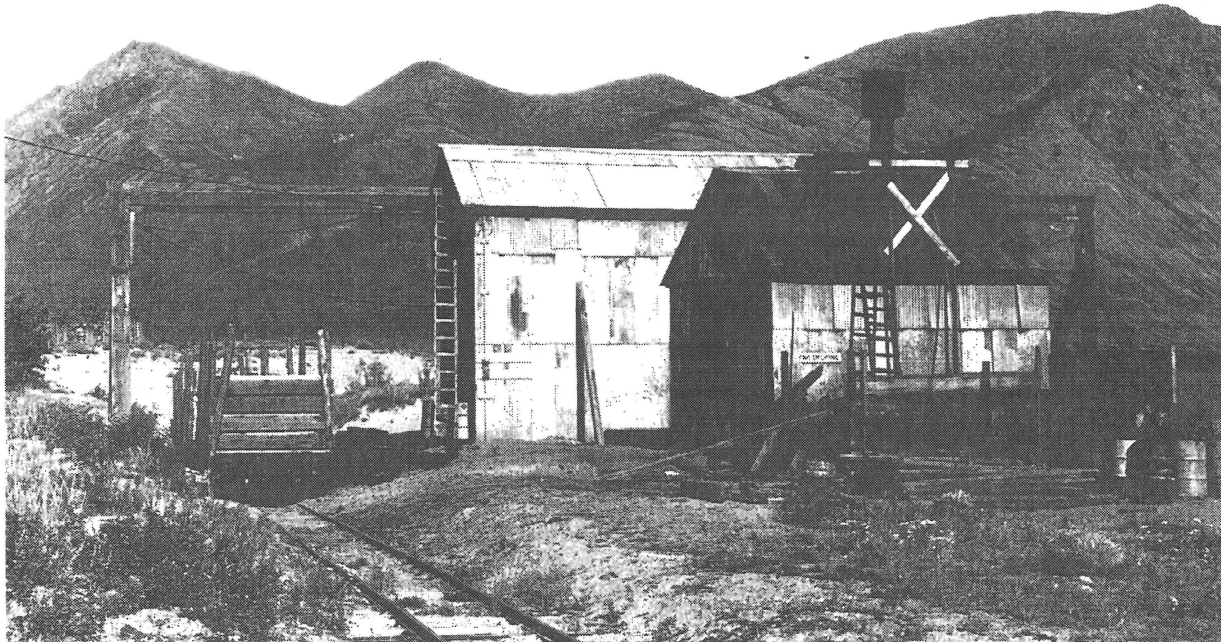


Figure 5: The Carcross tie treatment plant, n.d. from: *Carcross Tagish First Nation, originally from White Pass and Yukon Corporation Limited records.*

Photographs showing the tie plant in both the early and final years of its existence, indicate that the plant buildings and tie treatment procedures changed very little during nearly 30 years of operation. This has been confirmed by interviews with informants familiar with the plant in the late 1940s/early 1950s, and in the summer of 1975, its final year of operation.

The tie plant consisted of two structures — the plant itself and a smaller shed to the west housing a boiler that heated the hot treatment bath. The boiler was coal-fired and White Pass rail workers delivered the coal used as fuel. Water for steam was pumped from the nearby river. Steam heat from the boiler was piped underground into coils lining the bottom of the hot tank. As the only enclosed shelter on the site, the boiler shed was also used as a lunch room.

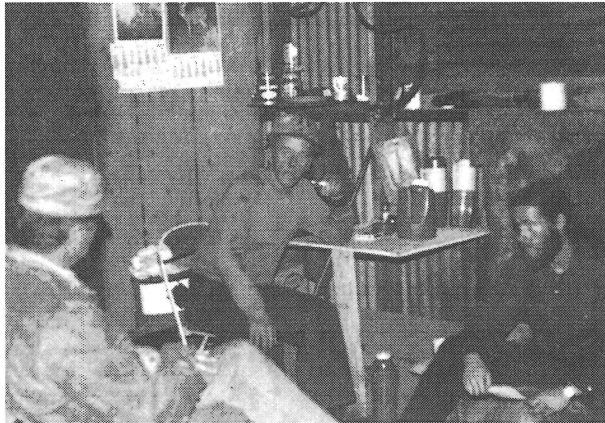


Figure 6: Interior of lunch room in summer 1975. Kelly Ogle photograph

metal structures fabricated of welded 1/2 inch steel.⁵⁰ On the south or river side was the hot bath, the first stage in the treatment. On the inland side was the cold bath into which ties were immersed in the second stage of treatment. Each vat was large enough to hold two bundles of ties laid out vertically. Informants estimated that each tank was about five feet wide and 15 to 17 feet long. A heavy I-beam ran along the centre of the building just under the roof and extended out beyond either end of the building. This was supported outside the building by timber uprights. It supported a chain hoist with a metal cage at the bottom. Initially a gasoline motor ran the hoist. By the early 1950s, this had been replaced by an electric motor.⁵¹

In its last years of operation, diesel fuel for the vats was stored in a 900 gallon tank outside the southeast corner of the tie plant. A gravity feed hose into the plant allowed the operator to add more diesel to the vats by turning a valve. In the early 1950s, diesel oil was delivered to the site in 45 gallon drums. According to the informant, these might extend from the area near the warehouse all along the waterfront to the tie plant.⁵² In both instances, the diesel fuel was delivered to the site by White Pass workers for the purpose of treating ties.

6.2 Tie Treatment Procedure

The following account describes the treatment and handling of railway ties in the summer of 1975. This information is from a telephone interview with Kelly Ogle, 6 Feb. 1997 and a personal interview with Bobo Larocque on 6 Feb. 1997. Both informants had very clear recollections of that summer's operations. Mr. Ogle had also taken, and loaned me, several photographs showing the tie plant in operation.

The untreated ties were stacked outside in layers, 10 to a layer, each layer cross-stacked, approx. 12 or 13 layers high. The ties themselves were rough 6 x 8s, 6' 6" long. The green ties would have been delivered to the site the previous fall, allowing several months for the wood to air dry. As a boy, Harold Gatensby remembers being paid five cents per tie for helping to stack the ties on the ground near the plant when they had been trucked to the site. Aerial photographs show that the ties occupied an immense area of ground.⁵³

The tie treatment plant was a tall one room rectangular building framed of heavy timbers clad in corrugated metal with a shallow gable roof. The approximate dimensions of the building were 16 x 38 feet.⁴⁹ The narrow ends of the building were unframed and open to the weather. The building was set between two railway spurs. A concrete apron at the north end of the building provided space for removing ties from the cages and loading them onto rail cars.

The plant contained two vats sunken into the ground and set end to end. These were heavy



Figure 7: Unknown boy & Kelly Ogle transporting untreated ties to plant, 1975. K. Ogle photograph

The ties were taken from the storage stacks and put in bundles of 30 on a little railway car or buggy. Workers used a small rail car and wagon to transport ties to the siding at the river (south) side of the building. The ties were stacked together in bundles of 30 ties. The cage at the end of the chain hoist was lowered over the bundle and secured with a "boomer". The contractor, Bobo Larocque, had modified the cage, using the "boomer" to fasten the bundle rather than a couple of metal bars inserted across the bottom of the cage. This way he could fit in another six ties into every bundle. There were four cages in all, meaning

at any one time that two bundles could soak in the hot vat and two in the cooling vat.

Using the hoist, the cage of ties was lowered into the tank of heated solution consisting of diesel and pentachlorophenol for one-half hour. The solution in the vat was heated to a temperature of 220° F (107° C). Then the ties were lifted out and then immersed in the second tank (the cold bath) of undiluted diesel for another half hour.⁵⁴ When filled, each tank had a clearance of about 2.5 feet between the surface of the liquid and the top of the tanks. The level of liquid rose higher when displaced by the bundles of ties.

White Pass railway section crew workers had looked after the initial fill-up of the two tanks or vats as well as filling a 900 gallon storage tank at the southeast corner of the building. Later on during the contract, they topped up diesel in the storage tank. The fuel was delivered by White Pass fuel trucks. There was a gravity fed hose from the diesel tank to the inside of the plant. Mr. Larocque added more diesel to the vats as needed by turning on a valve. Mr. Larocque estimates that he never used more than 850 gallons of diesel over the summer in addition to the initial fill-up of the tanks.⁵⁵

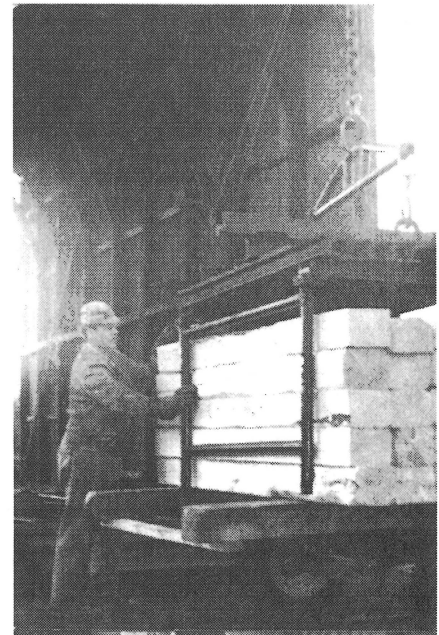


Figure 8: Bobo Larocque adjusting cage over untreated ties. Kelly Ogle photographer

Periodically he would dump a few gallons of pentachlorophenol to the hot tank. There was no set proportion for this. The PCPs came in smaller blue containers, he thinks 5 gallon to 15-20 gallon size.⁵⁶ These had been delivered to the site by White Pass workers at the beginning of the contract. It was a yellow liquid and Mr. Larocque thinks the brand name might have been *Pentox*.

After removal from the second tank, the bundle of ties was set on a concrete apron. The cage was removed, then the ties were loaded onto railway flat cars using a tool called a 'picaroon.' White Pass section workers then transported the flat cars to various sites along the railway as needed.

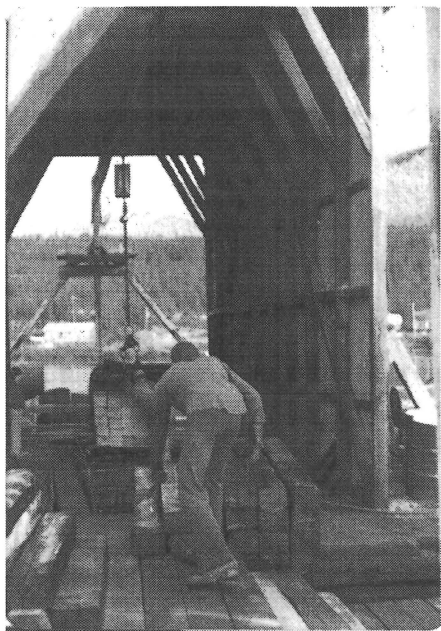


Figure 9: Kelly stacking treated ties on rail cars in foreground, untreated ties being lowered into first vat in background. *Kelly Ogle photograph*

During the summer of 1975, a three man team treated a total of 16,192 ties in 45 days. Bobo Larocque, won the contract for a bid of 50 cents per tie. The agreement he signed with White Pass specified the details of the treatment method. Mr. Larocque, in turn, hired a worker - Kelly Ogle - whose main job was to handle the ties during the various stages of treatment.⁵⁷ Before the tie treatment began, White Pass workers inspected the bottom of the hot tank to ensure that the heating coils had no leaks. A local old-timer, Tis Evans, had been hired by White Pass to operate the old coal-fired boiler after another boiler supplied by White Pass proved ineffective. Evans would get up at 3:00 a.m. to stoke the boiler and have the pressure up by the time the other two arrived at 6:00 a.m. Some days they treated more than 500 ties other days about 300 if they ran out of railcars. Some of the flatcars were smaller than others and held fewer ties. A few times work was delayed due to equipment breakdown (White Pass had to eventually buy a new electric motor for the hoist) or rain. On occasion, the crew worked all night if it had rained during the day.

When asked about any health or safety inspectors that may have visited the site, Mr. Larocque replied, "There was nobody around those days." He and his worker wore steel-toed boots, heavy rubber gloves and he was careful "not to splash around."⁵⁸ Otherwise, like most others of that time, they were unaware that they were dealing with potentially dangerous substances and took no special protective measures.

Soon after the contract was completed, White Pass section crew workers pumped out the tanks. Bobo assumed that they were pumped into drums and trucked elsewhere, but as he wasn't present when this happened he could not confirm this. Other informants have stated that some years the tanks of fuel were boarded over and the solution left in place when the tie plant was not in use.

The tie plant was never used again. According to a few informants, Dave Harder of Ten Mile Ranch later took on the contract and treated the ties on his property. When White Pass section crew workers dismantled the buildings in 1979, there was little left. The vats had already been removed and all that was left was the empty shell and the I-beam that once held the chain hoist. There were no barrels or other containers in the area.⁵⁹

7.0 CONTAMINANTS USED ON SITE & OTHER POTENTIAL SOURCES OF CONTAMINANTS

1900 - Although the sawmill on the site was fuelled by a wood-fired boiler, it is likely that some grease and other lubricants were used on its machinery.

ca. 1925 - Steamer *Tutshi* converted from wood to oil (Bunker C Oil) as fuel. According to one informant this was pumped from tanker cars directly into the vessels fuel tanks. Fuel consumption records show up to 4000 barrels of oil burned by the *Tutshi* in one season.⁶⁰

ca. 1940s - a railway spur line was built to the site in 1900. The replacement ties in the spur line along the waterfront would have been treated at least from the 1940s on and leaching chemicals into the ground.

1942-46 - As a depot for the two major defence projects, the general area was used as a staging area for highway construction and pipeline construction. Several photos of the time show fuel drums north of the train station. Apparently quite a bit of construction equipment and fuel was also stored out by the airport.

ca. 1949 - Commencement of tie treatment on site. Confirmation that ties were dipped in diesel. Informant says there were no other additives but he did not personally work in the tie plant.

early 1950s - Worker stated ties treated with diesel and *Lauxtol* added to cold bath. Stated that the pentachlorophenol product came in barrels and was like "molasses."

- worker stated that diesel for the tie plant came in 45 gallon drums and sometimes occupied entire area from the depot east to the tie plant. Apparently it was not uncommon to see fuel spilled on the ground near the warehouse.

1975 - last year of tie plant operation. Diesel for the plant was stored in a 900 gallon container outside the southeast corner of the tie plant. Ties treated with a mixture of diesel and pentachlorophenol in the hot bath; straight diesel in the cold bath. Informant thinks the product name was *Pentox*, it was a yellow liquid that came in smaller blue barrels.

Other Potential Sources of Contamination:

- according to one informant, a buried tank near the dock was used to store extra diesel for the tie plant in the early years.
- the bases of railway and telegraph poles on the site were treated with preservative.
- the *Tutshi* sternwheeler was painted every year with white lead paint.
- early this century, sacks of ore concentrate were shipped from various mines on Tagish and Atlin lakes to the Carcross depot then transported by rail to Skagway.⁶¹ The railway station

would also have been a transshipment point for supplies ordered for these mines including fuel and any chemicals used in processing ore.

8.0 CONCLUSIONS

The contaminated site on the Carcross waterfront, identified by a representative of the Carcross Tagish First Nation and tested by EBA Engineering, was formerly occupied by a railway tie plant belonging to White Pass. According to the archival documentation, the tie plant site became part of the White Pass property on the Carcross waterfront in 1900. The sale of the property to the company by the Canadian government was authorized by Order-in-Council P.C. 1581 allowing free grant of the property required for "railway purposes, dockage and sidings." The company in turn leased out the property, that later became the tie plant site, to a sawmill operation for a few years at the turn of the century.

No evidence was found that the American army treated ties or used PCPs in the contaminated area during the World War II period when the U.S. Army leased the railway for four years. Photographic and oral evidence did show that White Pass treated ties on the contaminated site from the late 1940s until 1975. The company constructed the plant, ordered the untreated ties from local mills, and supplied the chemicals used for tie treatment. A number of informants have confirmed that these chemicals were diesel and PCPs, both used on the site for approximately 25 years. Over the years, a series of contractors operated the tie plant according to detailed instructions provided by the company.

As mentioned in the introduction, while this report has focussed on the former tie plant site, this does not mean that there are no other chemical contaminants elsewhere in the waterfront area. Indeed, given the variety of activities over the years as well as the quantity and variety hazardous materials that have been stored or used here, there are good grounds for recommending further testing in the waterfront area.

Endnotes:

1. Report prepared by Renewable Resources entitled: "Carcross Contamination, Status & Options," 2 December 1996; Notice of Designation of Contaminated Site, 7 February 1997, Renewable Resources file no. 4202-20-05.
2. telephone conversation with Ruth Gotthardt, 17 Feb. 1997.
3. Roy Minter, *White Pass: Gateway to the Klondike* (Toronto: McClelland & Stewart, 1987), p. 300.

4. Yukon Archives (YA) plan H-279, "Amended plan for survey of lot ___, group ___, located at Upper Caribou Crossing for the British Yukon Mining, Trading & T. Co."; Executed by R. Joue, 2/5/00. Although the title refers to an earlier plan, this particular survey appears to be the basis for a government survey carried out by C. W. McPherson a month later in which the blocks are numbered and a fifth block is laid out on the south side of the narrows for a government reserve. (YA plan: H-163)
5. from document entitled "Land Tenure Chronology," compiled by Laurie Henderson.
6. Helene Dobrowolsky & Rob Ingram, *Edge of the River, Heart of the City*, (Whitehorse, Lost Moose Publishing, 1994), p. 9; Dobrowolsky & Ingram, *White Pass and Yukon Railway Station, Carcross, Yukon* (prepared for National Historic Sites and Monuments Board of Canada, 1991).
7. YRG I, Series 1, vol. 7, f. 466 ci, pt. F GOV 1613.
8. YRG I, Series 1, vol. 7, f. 466, pts. Bii, Ci, F GOV 1613.
9. letter dated 31 Jan. 1950 unsigned to G. Sinclair, Chief Lands Division, Department of Resources and Development, Ottawa. Copy of DIAND document supplied by Laurie Henderson.
10. 20 April 1972, T. A. Retallack, Supervisor of Lands, DIAND, to James Smith, Commissioner of the Yukon; Laurie Henderson research file.
11. Dept. of Tourism file #4057-10-83.
12. 24 July 1974, James D. Piers to M. E. Miller, Ass't. Commissioner; copy from Laurie Henderson's research files.
13. Land Tenure Chronology, op. cit.; Dept. of Tourism file #4057-10-83.
14. Telephone communication from employee, YTG, Dept. of Justice, Land Titles Office, 24 Feb. 1997 referring to Plan 70266; Tourism file #4057-10-83-1.
15. Ibid.; Loree Stewart, personal communication, 20 Feb. 1997.
16. Minter, pp. 315, 327.
17. Ibid., pp. 341-345.
18. YA 3620, MacBride Museum Coll., Barley photographer; YA 4667, H. C. Barley Collection.
19. White Pass and Yukon Route, Caribou Crossing, Insurance Plat, 14 November 1900, revised 30 June 1903. From Carl Mulvihill, Skagway.

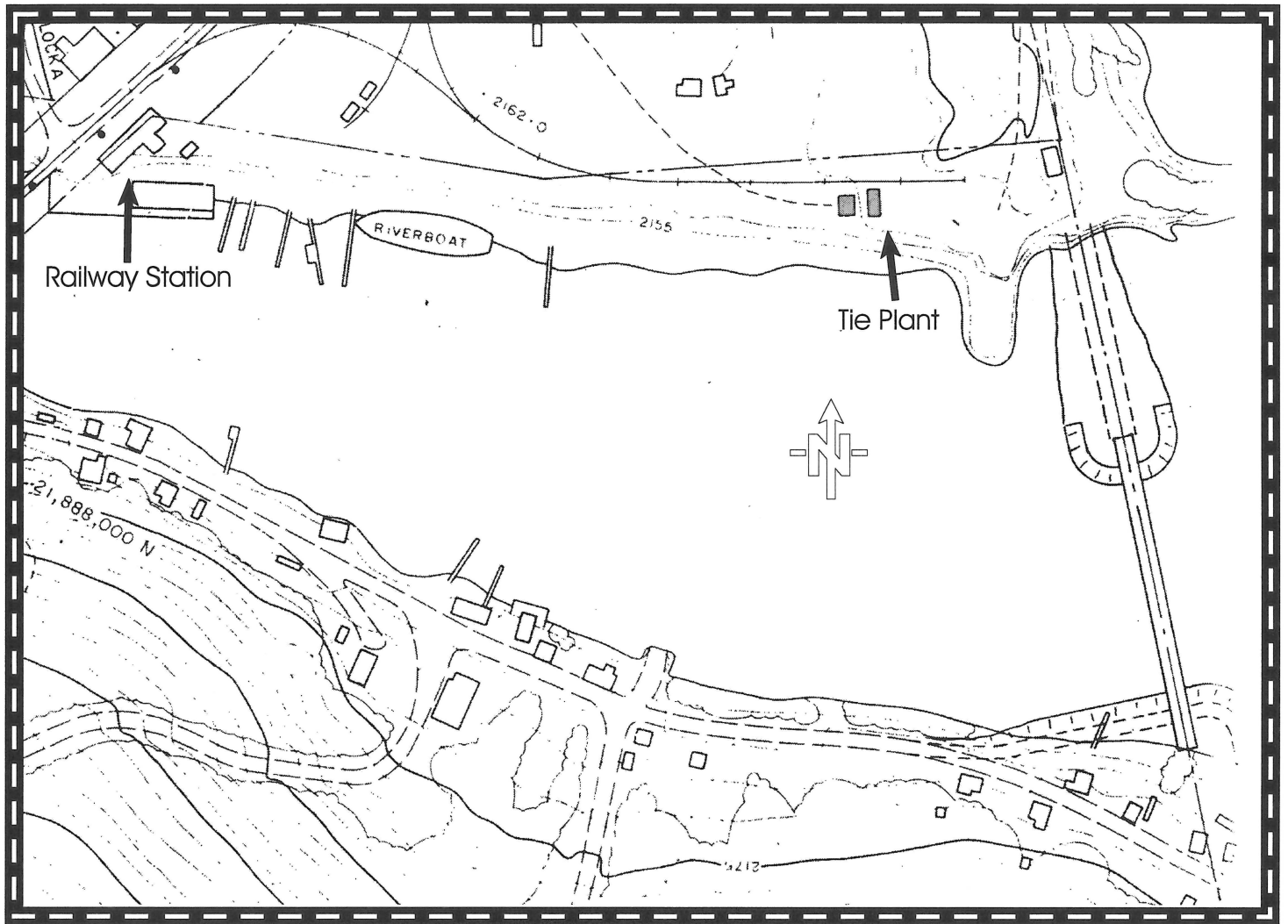
20. WP&YR Corporate Records, RG I, VI-20E, COR 816, Upper Yukon Consolidated Lease, 1901-07.
21. Bill Dickson, 7 Feb. 1997.
22. Gordon Bennett, *Yukon Transportation: A History*, p. 137.
23. Bill Dickson quoted in: Dobrowolsky & Ingram, *White Pass and Yukon Railway Station, Carcross, Yukon* (prepared for National Historic Sites and Monuments Board of Canada, 1991).
24. YA/Finnie Collection, PHO 142, photo #s 568, 569, 570, 572.
25. Dobrowolsky & Ingram, *Carcross Railway Station*.
26. All information about the late 1940s came from Mr. Bill Dickson, a former railway worker, in a telephone conversation on 7 Feb. 1997.
27. Ibid.
28. Norman James, 10 February 1997.
29. These statements were confirmed by three different informants: Norman James, Bobo Larocque & Bill Dickson.
30. "Preservation of Railway Ties and Other Timber," *Canadian Railway and Marine World*, Jan. 1934.
31. Ibid.
32. United States, Dept. of Agriculture, *Wood Handbook*, pp. 399-427.
33. *Railway Engineering & Maintenance Cyclopedia*, pp. 115-27.
34. Alfred Stamm and Elwin Harris, *Chemical Processing of Wood*, p. 185; U. S., Dept. of Agriculture, *Wood Handbook*, pp. 399-427.
35. Interviews with Kelly Ogle, 6 February 1997; Bobo Larocque, 10 Feb. 1997; Harold Gatensby, 10 Feb. 1997.
36. Stamm & Harris, *Chemical Processing of Wood*, p. 185.
37. Larocque, 10 Feb. 1997.
38. *Railway Engineering & Maintenance Cyclopedia* 115-27; "Wood Preservation in 1945," *Canadian Transportation* (Nov. 1946).

39. *Ullmann's Encyclopedia of Industrial Chemistry*, 1996, vol. A28, p. 363.
40. *Railway Engineering & Maintenance Cyclopedia*, pp. 115-27.
41. F.J. Meyer, "Tests Penta Treatment for Ties by Hot-and-Cold Bath," *Railway Engineering & Maintenance* 45:5 (May, 1949), pp. 478-9.
42. Wm. Dickson, 7 Feb. 1997; Norman James, 10 Feb. 1997.
43. *Railway Engineering & Maintenance Cyclopedia*, pp. 115-27.
44. Norman James, 10 Feb. 1997.
45. *Sax's Dangerous Properties of Industrial Materials*, 9th ed., 1996.
46. Bobo Larocque, 10 Feb. 1997.
47. Ibid.; technical information from Bengt Pettersson, Environmental Protection & Assessment, Renewable Resources, Gov't. of Yukon, 12 Feb. 1997.
49. This measurement was scaled off the Yukon Archives plan H-1662: "Carcross Townsite showing leased and surveyed land," n.d., Government of the Yukon Territory, drawn by H.R.G., scale 1"=200'. Kelly Ogle suggested that the building was about 14 x 32 feet.
50. Larocque, 14 Feb. 1997.
51. Bill Dickson Interview, 7 Feb. 1997; Norman James Interview, 10 Feb. 1997.
52. Norman James, 10 Feb. 1997.
53. Yukon Archives, map # R-162, Enlarged aerial photograph of Carcross and area, 1962.
54. Estimates of exactly how long the ties sat in the soaking solution varied from one-half hour (Kelly Ogle), to 45 minutes (Norman James) to one hour (Bobo Larocque).
55. Larocque, 14 Feb. 1997.
56. A photo taken by Kelly Ogle shows blue barrels lining the insides of the shed. After Mr. Larocque's comment, he examined the photo and confirmed these were the same barrels he remembered.
57. Mr. Ogle actually began work after the contract was underway. He replaced another person who worked for a short time but proved unsatisfactory.
58. B. Larocque, 10 Feb. 1997.

59. Tim Dowd, personal conversation with H. Dobrowolsky in Whse., 13 January 1997.

60. EBA Engineering Consultants Ltd., *Phase 2: Contamination Assessment of the Waterfront at Carcross, Yukon Territory* (submitted to Yukon Engineering Services, January 1997), p. 3.

61. These last two items also come from EBA Engineering, p. 3.



Appendix I

Extract from Yukon Archives, H-1662. Carcross townsite showing surveyed and leased land. Government of Yukon map, 1971. (source: Yukon, Records Office, series 10, projects.)

CARCROSS TIE PLANT RESEARCH PROJECT: BIBLIOGRAPHY

- compiled by H. Dobrowolsky with information from C. Andreae, February 1997
- unless otherwise specified, most of these sources are found at Yukon Archives.

CORPORATE RECORDS: White Pass & Yukon Route, accession #82/451.

Finding Aid introduction.

RG I, VI-2-E, Carcross lots miscellaneous COR 816

folder 1- copied letter from G.B. Edward, General Agent, Dawson, to H. Wheeler, Gen. Mgr. Skagway, 23 July 1923.

folder 7 - correspondence with UYC re lease on King's Saw Mill site.

Other Corporate History Sources: (from C. Andreae)

Canada. Department of Transport, *Statutory History of the Steam and Electric Railways of Canada*, 1938.

Financial Post Co., Historical Reports: Federal Industries Ltd., Historical Reports, revised 29 Oct. 1990; 31 July 1991, 21 April 1995.

White Pass & Yukon Route Railway Annual Report: The White Pass and Yukon Corporation Limited, Annual Report, 1975.

GOVERNMENT RECORDS: Government of Yukon

YRG I, Series 1, vol. 7, f. 466, pt. Bii GOV 1613

Land Acquisition in YT for Defence Projects - General Correspondence, 1943-46.

YRG I, Series 1, vol. 7, f. 466, pt. Ci GOV 1613

Land Acquisition in YT for Defence Projects, 1943-47.

YRG I, Series 1, vol. 7, f. 466, pt. E GOV 1613

Land Acquisition in YT for Defence Projects, 1943-45.

YRG I, Series 1, vol. 7, f. 466, pt. F GOV 1613

Land Acquisitions by U. S. Authorities for Defense Projects re: British Yukon Railway Co. (White Pass Co.), 1944.

YRG I, Series 1, vol. 8, f. 466, pt. I GOV 1614

Defense Projects, Land Acquisition Carcross, 1945.

MAPS & PLANS

* indicates plans of particular interest

- H-163 Plan of lots 1, 2, 3, 4, 5, Group 6, YT. C. W. MacPherson, DLS.
(original of H-162) C.W. MacPherson, DLS. June 1900. Mostly survey measurements, looks like one of original surveys in area. shows dam at Nares Lake.
- H-271 Amended plat of Caribou townsite at Upper Caribou Crossing being a subdivision of a portion of lot 2, group 6, Y.T. Surveyed for British Yukon Mining Trading & Transportation Co. shows lot 2 but no info as how property being used. ref. to section C.
- H-279 Amended plan for survey of lots, group 6, YT. located at Upper Caribou Crossing. R. Joue. 2/5/00 Nice hand traced and coloured map. Shows tie plant area as railway yards, section C, tract B.*
- H-584 Carcross, May 1903. Plan of lots 15 & 16, Group 6, YT signed by Deputy Supt. General of Indian Affairs and Chief Surveyor of Dept of Indian Affairs.
- H-913 Caribou townsite at Upper Caribou Crossing being a subdivision of a portion of lot 2, Group 6, YT. May 17, 1901. from: YRG, Series 1, Vol. 1-A, f. 35. not useful.
- H-922 Water lines and power: townsite, pump house and barracks facilities in Carcross area. Canol 2, Carcross Plot Plan, US Army War Dept. from: YRG I, Series 1, Vol. 8A, f. 4661. Mar. 29, 1945. Nice detail showing hotel, store, railway and army buildings. Does not include tie plant area.*
- H-947 Carcross, Police Reserve. Plan of lots 1, 2, 3, 4, 5, Group 6, YT. C. W. MacPherson. June 1900. from YRG 1, series 1, vol. 18, f. 4607, 2/6. looks like more finished version of H-163. blueprint.*
- H-981 Plan of lots 11 & 12, Group 6, YT. Feb. 1903. surveyor H.G. Dickson, DLS. from: YRG I, Series 1, vol. 23, f. 6558.
- H-1145 Blueprint (lot plan) of the revised WP&YR Caribou Terminals. Also marked is site for the Anglican Church. Anglican Church Records. October 18, 1910. Insurance plat no. 6. excellent, shows railway structures, King's Mill lease, stock yard, etc. Good for previous use of site.*
- H-1146 Blueprint showing surveyed portion of Wiley Shermer's homestead. Location of school & town of Caribou Crossing, 1910.

- H-1147 Carcross (lot division). This is an early survey of both sites above and below Upper Caribou Crossing. Plan of lots 1, 2, 3, 4 and 5, Group 6. same as plan H-947. *
- H-1168 Carcross (Caribou townsite), 1901-1963. This is a copy of a blueprint which was registered in Whse. in 1954. Shows the lot plan of Upper Caribou Crossing. Another date included is 1963 in which lots are further subdivided. Original plan drawn up in 1901. surveyor Geo. White-Fraser. - from Anglican Church Records.
- H-1172 blueprint of Caribou townsite, May 17, 1901. Not useful.
- H-1449 Sketch plan showing position of J.M. Ruffner's wharf and landing at Carcross, 1914. from: YRG I, Series 5, vol. 16, f. 918.
- H-1662 Carcross townsite showing surveyed and leased land. Government of Yukon map, 1971. (source: Yukon, Records Office, series 10, projects.) Good, large fairly recent map shows outline of structures on property.*
- H-2304 Plan of lot 14, Group 6, YT. H.G. Dickson surveyor. from 79/63, Carcross Community Education Centre.
- H-2317 Plan of Carcross townsite showing blocks of White Pass property and those which have been offered for sale by White Pass. ca. 1968, YTG map, source 89/51. Not useful other than showing lot 2, group 6 still owned by White Pass.
- H-2318 Plan of existing Carcross townsite showing the blocks in area of proposed subdivision and BYN land. 1968. YTG map, source 89/51. not useful.
- H-2320 Plan showing the land site of lease application by ACE Explosives Ltd. and ACE M.C. lands (lot 3, group 6, 1972. see Carcross area map, H-1662.)
- R-162 Enlarged aerial photograph of Carcross and area, 1962. from 86/70. dim. 91x204, scale 10cm = 1000 feet. - good view of riverfront showing plant, stacks of ties, *Tutshi* and railway siding.

OTHER MAPS AND PLANS

Heritage Branch

the following two plans are copies from the Skagway vault of WP&YR:

Caribou Terminals, Yukon Territory. Insurance Plat no. 7, 14 Nov. 1900. This map shows a spur extending to King's Mill site (later occupied by tie plant) and various buildings

associated with the sawmill operation.

The White Pass & Yukon Route Revised Caribou Terminals, Yukon Territory. 18 Oct. 1910. Large mill bldg. is gone, shows Anglican Church property and police lease.

Renewable Resources

Aerial photo of area dated 13 Sept. 1968.

Boundaries of contaminated site designated pursuant to the Environment Act and the contaminated site regulations, 16 Jan. 1997. Location: On vacant Commissioner's land near lot 1026 in Carcross on Quad 105 D/2. Scale - 1:1000. Dwg. no. 8-32.

Plan of Carcross waterfront showing land occupation, and test holes for contamination.

Site plan showing test hole pattern. EBA Engineering Consultants Ltd., 1996.

Private Sources

Carl Mulvihill, Skagway. White Pass & Yukon Route, Caribou Terminals. Insurance Plat. November 14, 1900; revised, June 30th, 1902.

PHOTOGRAPHS

Catalogued Photographs

- 394 Carcross panorama, 1900. NAC photo PA-23134, no copy neg.
- 395 Panorama, 1900. NAC photo no. PA-17171, no copy neg.
- 396 Partial view of Carcross with cattle barge and WP&YR box cars in foreground, 1900. H. J. Woodside photographer. NAC # PA-16262.
- 625 Partial view of Carcross featuring sternwheeler *Australian* docked in foreground, 1900. Larss & Duclos photographers. NM photo # J6191. no copy neg.
- 3617 Partial panorama of Carcross. Most prominent are the railroad swing bridge, the station and the sternwheeler, *Gleaner* docked, ca. 1910. MM Coll.
- 3620 View featuring the WP&YR yards. A locomotive, box and flat bed cars, freight sheds, barges and supplies are all visible. June 1900. Barley photographer. MM Coll.
- 4322 Partial panorama of community looking east from bridge, 1915.

- 4667 Panorama of tent community from across the river, showing King's Mill under construction. Barges and small tug line the shore, June 1900. See print 3620 for a continuous panorama. Barley photographer.
- 4670 King's Mill employees building scows in the shipyard area of the mill. Piles of lumber, tents and wooden sheds abound. Cabins across the river in background, June 1900. Barley photographer.
- 4671 View of the yard area, office and building housing saws for King's Mill. 1901. Barley photographer.
- 4672 View from across river of buildings, sheds, wood stacks and yard area comprising Upper Yukon Consolidated Company's King's Mill. Barges built by the company line the shore. [1901] Barley photographer.
- 5637 View of Caribou Crossing (Carcross) with the railway bridge dominating the scene. Sternwheeler at right is the Gleaner, 1900. J. Doody photographer. Scharschmidt. Coll.
- 6091 US Army camp at Carcross showing stacks of supplies, tents and railway cars. A portion of the afterdeck of Gleaner in foreground. 1942-45. Harbottle Coll.

Uncatalogued Photographs

Finnie Coll. 81/21

PHO 142

568. Caribou Hotel & equipment yard.

569. Pipe yard at Carcross.

570. Bob Shivel, Carcross Superintendent for BPC, stands by the welder he has fitted with railroad ties.

572. Unloading pipe from flat car at Carcross.

PHO 143

756. (159-9) Aerial view of Carcross, ca. 1943. (no sign of tie plant)

Harrington. Richard. 79/27, PHO 102.

Carcross folder. View taken from Caribou Hotel looking west showing train baggage car foreground, the Duchess, Tutshi and tie plant in background. Ca. early to mid 1970s.

Harrington. Richard. 85/25, PHO 275.

Carcross folder. Two different views taken from Caribou Hotel showing train in foreground, the Duchess, *Tutshi* and tie plant in background. Ca. early to mid 1970s. Taken same time as photo in PHO 102.

Heritage Branch Photos

Carcross, 1949. View of *Tutshi* and barge in foreground, tie plant in background.

Bill Dickson photographer

Photograph showing of tie plant site after the buildings had been dismantled and removed, ca. 1987. Robert Patterson photographer

Parks Canada

"Children dipping water at Carcross, Sept. 1950." View looking across river, tie plant in right background." National Museums of Canada, 571-625. original is a colour slide.

Other Photos

Nice clear close-up view of tie plant boiler shed and flat car full of treated ties, n.d. Copy given to Bengt Pettersson, Renewable Resources, by Harold Gatensby.

Photo supplied to Carcross Tagish First Nation by White Pass and Yukon Corporation.

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