

“Running Water” Supplying the Klondike Mines 1903 - 1906

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Running water, along with gold, are “the two absolute necessities in placer mining,”¹ according to George White-Fraser, a Klondike mining engineer in the drought summer of 1903. In the Klondike, water was almost always in short supply. Drift mining in the early days took advantage of spring thaw and runoff from the winter snow. However seasonal shortages were made worse as open cut mining, with its full summer season demand for flowing water, replaced the earlier drifting early in the 1900s. And up on the bench and hillside claims, miners were forced to sell off promising claims because there was, “not enough [water] to make a cup of tea.”²

Gold mining in the Yukon overcame many physical and technical obstacles in the early years of the Rush. However, as the easily worked gold placer deposits close to the surface were exhausted in the first decade of the twentieth century, the desire to maintain a profitable operation demanded ever more innovation and investment from the individual miner. The limited size of individual claims, the high cost of buying adjoining claims, the expense of specialized mining equipment, the demand for greater amounts, and cheaper sources, of power to run the new machines, and, most important of all, the need for reliable and abundant supplies of water severely tested miners, already under the shadow of corporate buyouts. They worked diligently, sometimes alone, often together, to address their problems, coming up with a range of ingenious, and as time passed, increasing desperate solutions to save the individual mining system. Ultimately they were forced to sell out to the corporate dredging giants. Many simply abandoned their claims.

The natural supply of spring runoff and summer rain in the Klondike valleys was limited. An average summer in Dawson has only 140 mm of rainfall. A dry summer meant disaster for the miner. In 1903, with just half the normal precipitation, miners up Quartz Creek were soon in trouble. After working for months taking out pay dirt and building up large dumps, they waited for rain. None came and, unable to clean up and pay their bills, they began to abandon the hills.³

In areas of concentrated mining activity like the Klondike, the legal right to use water became as important as the claim itself. Water rights were granted upon application and review by the Gold Commissioner. However demand for these rights far outstripped the limited natural supply. The Gold

Commissioner's office in Dawson was overwhelmed by a flood of water applications when Australia Creek was opened in 1904. By fall the office reported that applications were for three times the peak flow of the creek.⁴ With such a demand for a limited resource it is not surprising that disagreements appeared and quickly grew to large proportions. In August, 1904 Gold Commissioner Senkler noted 84 cases before his court, the majority “water disputes.”⁵ In the following year he again reported;

A large proportion of the litigation is due to the scarcity of water. As time goes on the necessity for water to work the lower grade properties at a profit increases. The supply is far less than the demand, and the result is many disputes arise as to the right of priority to what water there is in the creeks and streams in the vicinity of the gold-bearing ground. The production in future... will depend largely on the

Running water, along with gold, are “the two absolute necessities in placer mining.”

- George White-Fraser, 1903

Rocking on a relaxed afternoon at No. 6 Eldorado in 1904.

- PC, A Johns YT-171.



*Clean-up piles built up
underneath flumes.*
- PC A Johns YT-202



supply of water... In order to work at a profit water must be brought by gravity from the most available sources. The expense that will be incurred in carrying out water-schemes properly will be very great, and it is, in my opinion, the chief problem confronting the Territory at the present time.⁶

Individual miners, not blessed with the necessary capital resources to undertake proper "water-schemes," faced two choices. They either brought or kept water on their claims or, less favoured, moved their gravel to a supply of water.

On hillside claims complex networks of potholes and wing dams saved as much of the spring thaw

and irregular summer rain as possible. This supply was supplemented by water carried up the hills in pails and oil cans.⁷ Using rockers, which allowed the miner to reuse water, was slow and back breaking work, but it required much less water than sluicing. Some miners, with access to the creeks, erected gravity tramways to haul their paydirt down to the valley for washing up.

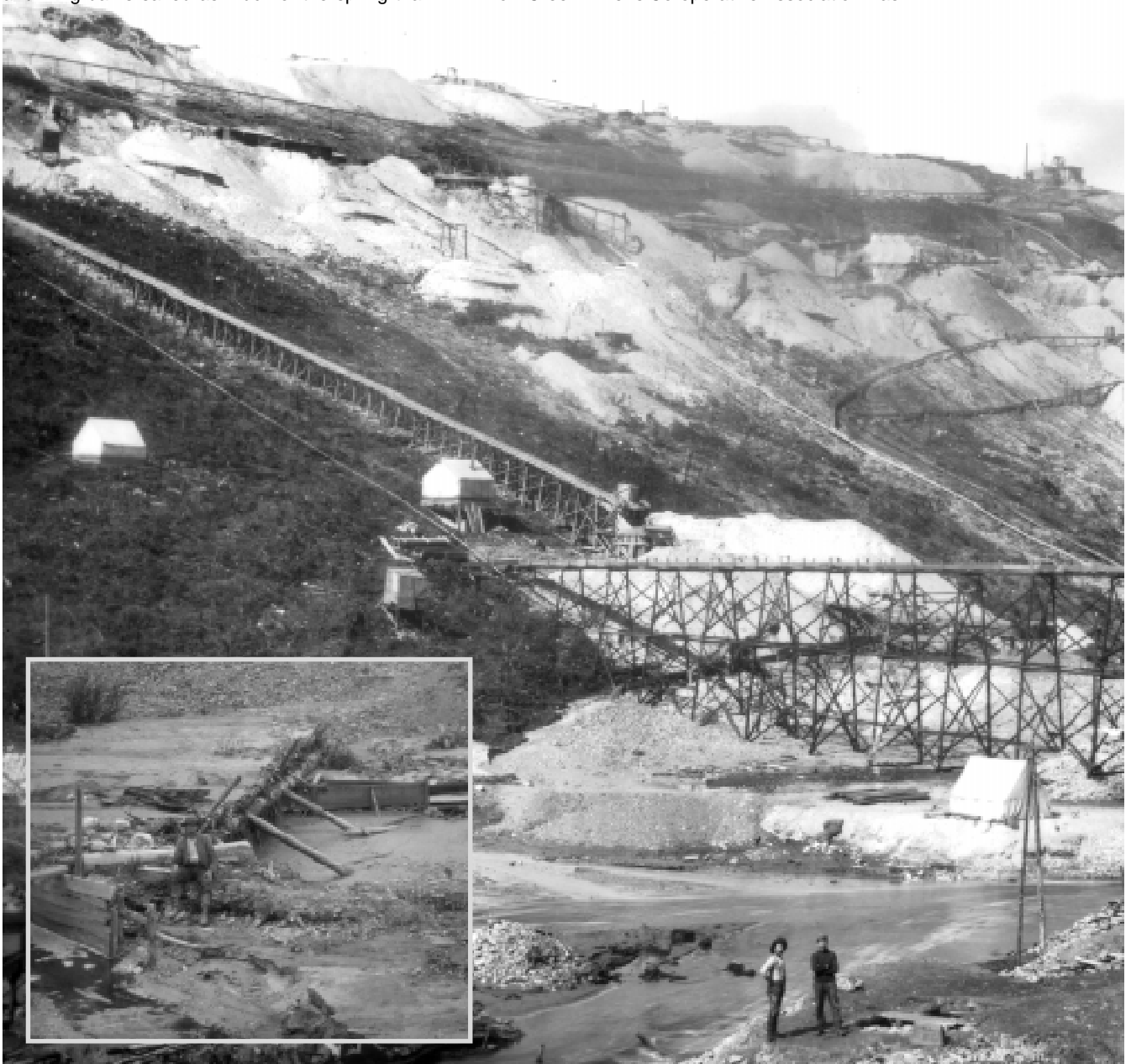
The obvious need for better distribution of water encouraged the formation of several varieties of water management systems. In the Atlin area which suffered from the same shortage of water, the Willow Creek Miner's Co-operative Association was

A tramway for paydirt down to the creek on Cheechaco Hill.

- PC A Johns YT-230

Inset: J.P. Anderson at his empty reservoir, 42 bd Bonanza Creek, 1903.

- PC A Johns YT-201



formed in the summer of 1899.⁸ After having “suffered long and patiently and the water monopolists had had things all their own way...,” over one hundred miners organized themselves to develop a two mile long ditch from Pine Creek to their claims along Willow Creek. Shares in the co-operative were sold to finance the ditch and assist miners in need. Miners volunteered their own labour to dig the ditch. In late August, 1899, the ditch was completed and water began to flow to the claims.⁹

Commercial water pumping firms were more common in the Klondike. As early as 1899 Falcon Joslin and his brother built a small ditch along Dominion Creek. Roughly three miles long, the ditch supplied the Joslin brothers with water for their own claims and for sale to neighbouring miners. They operated the ditch briefly and then sold out to a larger operator, Joslin moving from mining to real estate and mining agent.¹⁰ While water supply companies soon ran into financial and technical problems as the scale of operations increased, larger mining firms working hydraulic plants continued to supply individual miners with water

surplus to their own needs. In dry years and as hydraulic operators expanded their operations this surplus disappeared and neighbouring miners were once again out of water. In 1904, a year with average summer rainfall, miners on Cheechako Hill were able to purchase water from the Pacific Coast Mining Co. Their large pumping plant on Bonanza Creek brought up “2 sluiceheads of muddy, used water” to a reservoir where it could be recirculated. The Electric Light Co. of Dawson balanced its utility load by pumping water from Bonanza Creek to a reservoir 350 feet above the creek. From here water was sold for \$7.50 per hour for each sluicehead.¹¹

The regional water shortfall prompted the Klondike mining industry to promote several ideas to increase the local natural supply of water. One of the first of these projects was undertaken by Joseph and Ellen Acklin.¹² The Acklins had established a farm on the sunny north side of the Klondike River about three kilometres above Dawson. While raising vegetables and hay were profitable, the farming business was quickly abandoned when gold was discovered on the property. After hydraulic began

McDonald's Pumping Plant
- PC A Johns YT-150





in the dry summer of 1903 the Acklins found their mining operations limited by the availability of water. They applied for water rights from Moosehide Creek and the Twelve Mile River. Surveys for two ditches were completed the following year and construction of the ditches began. However, the perennial problem of poor capitalization brought the project to a halt uncompleted in 1905.

Miners' difficulties and the failure of these small scale projects led to a growing demand for government involvement in the water supply business.¹³ During the hearings of the Britton Commission, looking into the Treadgold Concession, several miners called upon the government to undertake the construction and operation of a centralized water supply and distribution system. The example of Calgoortie where the Australian government built a 350 mile long pipeline into the desert to carry water to a mining field was raised several times.

The Canadian government responded to the water difficulties of the Klondike and the demands of the miners by preparing a survey of a possible water system. In the spring of 1903, W. Thibaudeau, a civil engineer with the Department of the Interior, was instructed to prepare a preliminary plan for a massive water system. He surveyed the upper



Hydraulic mining operations of the Pacific Coast Mining Co. on Cheechaco Hill - PC A Johns YT-223

Editorial cartoon in the Klondike Nugget of February 3, 1903 supporting the active campaign of miners for a central government water supply system for the Klondike.

TO RAIN OR NOT TO RAIN?



Mr. Foster and Mr. Oliver had three separate encounters in the House of Commons over the Yukon proposal to hire a rain-maker. In the meantime Yukon—and presumably Hatfield also—went on quietly with the preparation. The rain—if rain there come—will fall as of old on the just and the unjust alike, so that were Mr. Foster in Yukon, instead of criticizing its people at a range of five thousand miles, he would get as thorough a soaking as the ninety and nine just persons who need no rain—not repentance.

Hatfield's arrival in Dawson prompted a vigorous debate in the House of Commons over the use of government funds to hire a rainmaker.
- Yukon World, Je 5/06

Klondike watershed through March and April preparing topographical maps and identifying several possible ditch routes. Two years later he was ordered to prepare a detailed water proposal.

Thibaudeau worked on the government proposal through the summer and fall of 1905, reviewing his earlier work, considering competing commercial proposals, and studying the ground once more. His report on "the project to supply the Klondike Mining District with a complete water system for hydraulic and sluicing purposes" was completed in February, 1906.¹⁴ The proposed water system, estimated to cost over \$6 million to construct and nearly \$600,000 annually to operate, included over 350 kilometres of canal, 29 kilometres of metal syphon, and 5 kilometres of tunnel. It was to draw water from far up the main branch of the Klondike River and distribute it to miners on Bonanza and Hunker Creeks as well as the north side of the Indian River basin. The high cost of the system and the rapidly changing needs of the Klondike mining industry however eroded the Government's, probably always limited, interest in the project and it was quietly shelved.

Unable to raise either commercial or government capital for the development of a regional water system, the Klondike based mining operations lost control of their future. Future capital flows, directed to different types of projects, would force major changes in the system of Klondike mining. The miners however did not give up so easily and as economic pressures on their operations increased so did their desperation.

The creeks supplying the water for Klondike mining were precipitation fed. Since it was becoming clear that it would be difficult, and expensive, to supplement the local water supply from external sources, some mining companies argued for increasing the natural local supply. Nine of the larger companies, mostly hydraulic operations, approached the Territorial Council in the summer of 1905 with a proposal to hire a professional rainmaker. The Council accepted the idea. A \$10,000 contract with Charles M. Hatfield, a California "precipitationist", was signed, "to increase the rainfall... sufficient to insure, as far as ample rainfall will, a successful and prosperous summer for the placer mining industry of the Dawson District."¹⁵

Hatfield and his assistant arrived in Dawson during an early summer hot spell in 1906. By the 11th of June he had set up his equipment; a tall tower, containers with a variety of his rainmaking chemicals, and devices for sending them into the atmosphere, on the top of King Solomon's Dome. Hatfield immediately began his demonstration and "threatening clouds" soon gathered around the Dome. Despite the fulminations and stink produced by the apparatus only two small showers of 6 mm on the 15th and 17th followed and the newspaper noted "the sluicboxes [remained] as dry as a wagon tongue." One of Hatfield's neighbours, J.W. Berg on Quartz Creek noted dryly that he and his wife, "had come to town to take a bath."¹⁶

Chief Isaac, the chief of the Hän people at Moosehide, took advantage of the local consternation and claimed Hatfield's failure was due to the power of the First Nation's four Medicine Men. The chief, long familiar with local weather patterns, stated that he would stop the rain until Hatfield was dismissed. He further promised that his Medicine Men would produce "oceans of rain" for just \$5000. The Territorial Council, already sold on Hatfield's "scientific method," dismissed Chief Isaac's offer as superstitious nonsense. Hatfield's subsequent failure was attributed to the still imperfect understanding of the principles of scientific rainmaking. Hatfield himself grasped the crux of the problem in his farewell to Dawson, "It is a well known fact that the hydraulic miner requires a great deal of water, which they did not receive." Other ways of addressing the water shortage were necessary.¹⁷

The failure of the individual mining system to address the water supply problem was only the most obvious of a host of technical and economic shortcomings in the efficient mining of the more deeply buried Klondike placer deposits. The result was a continuing drop in the production of gold. Relying on luck to strike gold, unable to effectively mine their small holdings, subject to rapidly escalating costs for power and water, the individual miners of the Klondike felt besieged in the land they felt they had made for themselves. It would be the highly centralized and Outside controlled corporations that would invest the capital and solve the technical problems of the goldfields. However, the individualistic mining system that founded a newcomer society in the Yukon would be pushed to the margins.

Notes

1. National Archives of Canada. *Transcripts of Public Hearings, Britton Commission Inquiry Into the Treadgold and Other Concessions in the Yukon Territory*, p. 52. Hereafter *Britton Commission*
2. *Britton Commission*, p. 211.
3. *Britton Commission*, pp. 56 and 175.
4. *Canadian Mining Review*, Dec., 1904, p. 257.
5. Annual Report of the Dept. of Interior, 1903-04, Yukon Territory, pp.6-7.

6. From H.A. Innis, *Settlement and the Mining Frontier* (Toronto, 1936) p. 223.
7. *Britton Commission*, p. 300.
8. Reports of the Willow Creek Miner's Co-operative Association by Alfred Carmicheal were published in the *Atlin Claim*, Aug. 19 and 26, 1899.
9. Co-operative actions were also promoted in the Klondike. An example is noted in *Britton Commission*, p. 238.
10. *Britton Commission*, p. 579.
11. Annual Report of the Surveyor-General, 1906, p. 157 and *Britton Commission*, p. 410.
12. From L. Green, *The Gold Hustlers* (Anchorage, 1977) pp. 90-96.
13. *Britton Commission*, pp. 233, 250, 290-291, 298-299. Information on the Australian example was also reported in the *Dawson Daily News* of July 28, 1910 and the *Canadian Mining Review*, Nov., 1904.
14. Surveyor-General, 1906, pp. 127ff.
15. Hatfield's contract noted in Parliament of Canada Sessional Paper No.174, 1906.
16. *Yukon World*, June 6, 7, 10, 12, 13, 16 and July 7, 1906.
17. *Yukon World* June, 14, 1906 for Chief Isaac's proposal and June 17 and 27, 1906. Weather information courtesy of Don Watt, A.E.S. Weather Station, Whitehorse and *Daily Climatological Data 2.0*, Climate Services Division (A.E.S. Sept., 1989).

Yukon Gold drawing of dam at 57 ad, Upper Bonanza Creek. Construction took place between August 1906 and July, 1908. - PC dwg. 3.A20.74

