

New North West Corporation, Limited; the completion of the prospect tunnel at Jackson Gulch in the high-level gravels at that place; drilling and shaft sinking ahead of Dredge Canadian No. 4; experimenting with water thawing of the gravels ahead of Dredge Canadian No. 2; and the operation of the machine shop, electrical repair shop, warehouse and stable at Bear Creek.

The labor conditions throughout the 1923 season were fair, there being a sufficient supply of men at all times to carry on the work. An average of 70 men were employed in the period May 1st to October 31st. Wages remained the same.

42,149 meals were served at the Company camps at a cost of \$29,108.85 or \$2.07 per day of three meals. Schedule No. 1 attached gives the mess costs in detail.

The temperature conditions were favorable throughout the summer months and there was a sufficient supply of water for the operations at all times.

In general, the prices for material and supplies remained at about the same level as for the preceding year.

OPERATION OF DREDGE CANADIAN No. 2.

Regular spring repairs were commenced on April 9th, with the men boarding at Bear Creek Camp. The summer camp was opened on April 19th after which date all men working on this dredge were boarded at Camp No. 2.

In addition to the regular work of giving the machinery a general overhauling and replacing worn out parts, the spud was found to be broken. It was necessary to take off the side plates, to

reinforce the angle bars and patch the cracked plates. Repairs were made with the regular operating crew.

The bucket line was pulled on on May 14th and digging started at 4:30 P.M. on May 15th. Some trouble was had with the lower tumbler shortly after starting but this was soon remedied. An extra lower tumbler was delivered to the boat in the event the trouble could not be repaired. As the roads were very soft this caused considerable extra expense.

Operations continued without other serious interruption until the morning of December 13th when shortage of power coupled with extreme cold made it advisable to discontinue for the winter. During November, from the 17th to the 22nd, it was necessary to shut down account shortage of power from slush ice in the power ditch. The camp was closed December 13th.

2,137,861 cubic yards of material were handled yielding \$199,036.60 at a cost including overhead of \$145,080.35, leaving a net profit of \$53,956.25.

Schedule No. 2 attached hereto shows detailed costs of operation.

With the exception of the area thawed by the experimental water thawing plant, the entire season's operation was in the naturally thawed area.

The dredge lost 575 hours out of a total of 5016 hours, making the operating time 88.5% of the possible.

OPERATION OF DREDGE CANADIAN No. 4.

As this boat rested on the bottom of its pond all during the

winter, it was necessary to cut it loose from the ice early so that she could raise up easily when the Spring freshets started. This work was started on April 6th and was completed in good time.

The regular repairs were also started on April 6th and consisted of the usual overhauling of machinery and replacing of worn parts.

The bucket line was pulled on on May 9th and digging started at 9:30 A.M. on May 12th. The entire country surrounding this dredge was flooded with water during the early part of the season but we were fortunate in not having any serious breakdowns and were able to keep the boat operating steadily. There was no material interruption to the operations during the entire year. The dredge was shut down for the season at 7:00 A.M. on November 1st.

The dredge lost 361.25 hours out of a possible 4152 hours, making the running time 91.3% of the possible.

1,906,753 cubic yards of material were handled, yielding \$58,716.19 at a cost, including overhead, of \$121,086.35, making a net loss of \$62,370.16. Schedule No. 3 attached hereto gives detailed costs of operation.

Drill prospecting ahead of this dredge in the spring indicated a value of about 10 cents per cubic yard. The ground was very difficult to drill and values of the different holes varied considerably, but it was thought the general average of the prospects would indicate the value of the area to be dredged. This proved misleading however, as the average value recovered by the dredge was only 3.07¢ per cubic yard. This recovery was further checked in the fall by sinking shafts in the area upstream from the boat. The values found are shown on the blueprint attached to this report.

The operations for the season were planned to thoroughly prospect the remaining thawed ground. The boat was sent straight upstream along the Right Limit of the thawed area to its upper end and then turned directly across towards the Left Limit to give a complete crosscut of the valley. This was completed and the boat turned around and put in good quarters before operations were discontinued.

DREDGE CANADIAN No. 4 DRILLING

Drilling ahead of Dredge Canadian No. 4 for the purpose of determining the proper course of the dredge cut was started April 6th. Drilling on the "Concession" has never been entirely satisfactory owing to the presence of large boulders and inability to shut off the water in the casing, but as the prospecting was in thawed ground it was not practical to sink shafts. As noted under "Dredging", the values secured were erratic and misleading. Twenty three holes were put down totalling 625.5 lineal feet at a cost of \$2371.25 or \$3.79 per foot. Schedule No. 4 attached hereto gives detailed costs of this work.

DREDGE CANADIAN No. 4 SHAFT PROSPECTING

As the only possible field of operation for Dredge No. 4 after this season's work was in the frozen area upstream from the boat, it was decided to prospect it with shafts to see if sufficient value was there to warrant an attempt at thawing with water.

Nine shafts were sunk to bedrock and a tenth started when instructions were received to cease work. Even with the small amount of work done it is clear that the values are not sufficient to warrant any further consideration being given this area as a field of

future operations.

The location and values of these shafts are shown on attached blueprint. Schedule No. 5 attached hereto shows detailed costs for this work.

DREDGE CANADIAN No. 2 WATER THAWING EXPERIMENT

To demonstrate the feasibility of thawing the frozen gravels on Hydraulic Lease No. 18 with water it was decided to make the experiment at one end of the course laid out for the operation of No. 2 dredge so that the area under test could be dredged and its success properly determined.

Owing to the character of the gravels we had to contend with, it was not possible to use ordinary water points, such as used on the smaller creeks. It was decided to drill holes at 50 foot intervals with a Keystone drill and set 2" pipes in these holes. Water was carried to these pipes through a 20" main and 12" distributing pipes. Connection to the 2" pipes was made with second hand $2\frac{1}{2}$ " fire hose purchased in Dawson. The 20" and 12" pipe was purchased on the outside.

Pressure was secured from a 14" centrifugal pump taken from Dredge Canadian No. 3.

Water was pumped into the ground for a period of one month through fifty pipes and the plant was then dismantled.

When this area was dredged it was found that not only had all the frost been taken out of this area but thawing had extended downstream for a considerable distance. About 150,000 cubic yards were thawed at a cost of \$5007.50 or approximately 3 cents per cubic yard. This is exclusive of the cost of equipment. In actual practice on a larger scale, this cost

Maps of here.



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