

then the Klena Klene River has been explored, from which the head waters of the Homathco are accessible, and quite likely the Loughborough Inlet could be joined up with the Klena Klene or by another route, which would pass through the heart of the lumber country as at present situated. With reference to the present settlers, it might reasonably be urged that those interests which have suffered the longest with the last reason should receive consideration amongst the first.

OIL ON CITY STREETS.

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The experiments with oil on the city streets were carried on with two objects in view. The experiments were to determine the efficiency of oil as a dust-laying device, and as a means of binding together the particles forming the surface of the street, to make a temporary pavement, and so improve traffic. The oil was claimed to contain 35 per cent. asphalt, and suitable for the attainment of this two-fold purpose.

The oil was applied on two pieces of street, and the cost per square yard was 22.67 cents. It seems to me that the following reasons are sufficient to warrant a discontinuance of the application of oil on the streets:—

1. A great many complaints have been made by residents, and not without reason, I think, of damage done by oil to carpets and clothing, and if all the streets were oiled the grievance would be very much aggravated.

2. In case of high wind storms it is not so much the dust on the business streets that create a nuisance as that which blows in from outside areas.

3. The oil does not bind the surface of the road to make it waterproof, and consequently the streets are not improved for traffic.

4. Assuming that oil as applied lays the dust for three months for each application, the cost per square yard per day would be 25 cents, whereas the application of water at 10 cents per 1,000 gallons cost .053 cents per square yard per day.

I would, therefore, recommend that four additional water carts be purchased, to be ready for operation in the spring.

The results of the experiments were that the fine dust had been laid effectively for a time, and that the larger particles of sand and clay, saturated with oil, instead of knitting, have become granular, and will not bind together.

Another experiment was made on Avenue E, from Seventeenth Street north. Believing that in the first experiment the fineness of the particles and the shallowness of the loose material were not conducive to the best results being attained, it was decided in the second experiment to remove the top surface. This was done, and the soil was then worked up until there were six inches of loose material, which consisted of about equal proportions of clay and sand.

A third experiment was made by taking a quantity of sand and adding to it sufficient clay to fill the voids as determined by the water test. A quantity of oil was then heated to a temperature of 150 degrees Fahrenheit, and sufficient of it added to the sand and clay to make a paste. This was placed in a three-inch layer of the street and thoroughly tamped. The results so far seem to be the same as those obtained from the use of the unheated oil.

Cost of Experiment No. 1.

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| Cost of preparing the street—One team and man, | |
| 21 hours at 50 cents..... | \$ 10 50 |
| One man, 22 hours at 25 cents..... | 5 50 |

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|---|-----------|
| Oil applied, 1,020 gallons at 14.5 per gallon..... | 147 90 |
| Cost of applying oil—Two men and team, 16 hours at 75 cents | 12 00 |
| Proportion of cost of attachment..... | 60 20 |
| Seven yards of gravel at \$2..... | 14 00 |
| Road roller, 5 hours at \$1 per hour..... | 5 00 |
| Gasoline engineer, 5 hours at 30 cents per hour.. | 1 50 |
| Five gallons of gasoline at 22.5 cents..... | 1 15 |
| Foreman, 5 days at \$3 per day..... | 15 00 |
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| | \$ 272 75 |

Area treated, 977 square yards.
Cost per square yard, 20.75 cents.

Cost of Experiment No. 2.

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|---|------------|
| Cost of preparing street—One team and man, 87 hours at 50 cents | \$ 43 50 |
| One man, 90 hours | 22 50 |
| Oil applied, 4,900 gallons at 14.5 cents..... | 710 50 |
| Cost of applying oil—Two men and one team, 60 hours at 75 cents | 45 00 |
| Proportion of cost of attachment..... | 210 75 |
| Road roller, 22 hours at \$1..... | 22 00 |
| Gasoline engineer, 22 hours at 30 cents..... | 6 60 |
| Twenty-two gallons of gasoline at 22.5 cents..... | 4 95 |
| Foreman, 5 days at \$3..... | 15 00 |
| | <hr/> |
| | \$1,080 80 |

Area treated, 4,993 square yards.

Cost per square yard, 21.65 cents.

Total area treated in two experiments, 5,970 square yards.

Total cost, \$1,353.55, or an average of 22.67 cents per square yard.

STREAM MEASUREMENTS FOR THE DOMINION GOVERNMENT IN ALBERTA, SASK.*

One of the most important resources of a country is its water supply. In the arid and semi-arid regions, the limit of agricultural developments is determined to a considerable extent by the amount of water available for irrigation, while in all parts of the country the increase in the population of cities and towns makes necessary additional water supply for domestic and industrial uses, in procuring which both the quantity and quality that may be obtained must be considered. The notable advances made in electric transmission of power have led to the utilization of water powers for the operation of manufacturing establishments, railroads, and municipal lighting plants, many of which are at some distance from the places at which the power is developed.

The success of future irrigation development in Alberta and Saskatchewan depends to a large extent upon a correct estimate of the water supply available and the permanency of that supply. Frequently applications to purchase lands under the Irrigation regulations cannot be dealt with for a considerable time and sometimes not at all, owing to insufficient information as to the water supply. In dealing with projects which must depend entirely on high water and flood stages it is very important that both the quantity of water at those stages and the probable duration of those stages, should be known. Applications to divert water from streams upon which the Department has made no investigation.

*Abbreviated from a report presented by Mr. Sauder to Mr. R. H. Campbell, Superintendent of Forestry and Irrigation.