TABLE II.

Kind of	land.	Method. No.	of acres.	Pounds. of powder.	Cost of labor	Cost per acre.	Remarks.
High I	Land ,,	Donkey engine	40 100 5	7,500 1,200 1,000	\$ 479.32	\$218.00 116.60 90.00	Grubbing included. 48 stumps per acre. Stumps only. Heavy clearing. Large fir stumps. Cedar and fir stumps Spruce stumps only. 18-in, below surface.
Valley Bench	land land ''	" " Powder and grubbing	20 10 1	4,550 900 400	1,000.00 1,010.30 80.00	123.00 138.00	
دد دد دد	«« «« ««	Powder & stump puller Donyey engine Powder and team	6 I I7	900 300 4,000	205.00 60.00	50.00 100.00 105.00	

## COST OF FILTERING WATER.\*

per day. Cost of pumping and filtering water per 1,000 gallons,

including interest, 10.1 cents.

Cost of filtering, including interest, 2.6 cents.

Cost of filtering 1,000 gallons, not including interest on capital account, 0.98 cents.

Amount coal used 1908 908.5 long tons.

Amount coal used per day, 5,555 pounds.

Including 500 pounds for electric light, 200 pounds for heating, 50 pounds for washing filters.

Making total for pumping day of 4,805 pounds.

## COST OF LAYING DUST WITH OIL.

## Some Experiments on Toronto Streets.

## Charles Sheard, M.D., Medical Health Officer, Toronto.

We have been conducting experiments with crude oil on our city streets for about one month, and on the whole the experiments have proven satisfactory. We have employed two varieties of this residue, and, so far, that obtained from the British American Oil Company, I think, is the preferable oil. I may say in this connection that varying localities will have different opportunities for securing an oil more or less free from smell. Thus, for instance, if Texas crude be employed, it has many advantages which the simple petroleum residue has not. It is comparatively odorless, and is to some extent misceable to water. This, however, we could not use here because of our difficulty in securing a plentiful supply, and also on the ground of expense. In Pennsylvania they have some varieties of petroleum residue which are practically odorless; that, I believe, produced from the neighborhood of Oleon is of this character. Nevertheless, the oil we are using has little to complain about regarding the odor, which soon dies away after its application. Generally, after five or six hours the odor is entirely gone. The method of application is to apply the oil in several relays, with a few days between. The number of applications required will vary somewhat according to the road to be treated. If the road is a reasonably good one, free from ruts and not subject to very heavy traffic, three applications of oil should last three months. If, however, the road is a bad one, full of ruts, and subject to being traversed by heavy drays and waggons, it will probably not last longer than one month. The better the roadbed, the lighter the dose required. If it be simply a sandy, mud road,

\*From information supplied by A. K. Grimmer, B.A.I., City Engineer, Fredericton, N.B.

with a thick covering of several inches of flour-like dust, then a heavy first dose of oil is preferable, the idea being that the admixture of oil and dust will form a coating upon the surface of the road to which the dusty particles adhere. If the road has a considerable grade, and is much exposed to the sun's rays, the oil will dry out sooner than it would if the road happened to be more or less shaded by the trees. The method of application consists in lightly sprinkling the streets from a watering cart driven at a pretty rapid gait over the surface of the road, endeavoring to so deposit the oil that the spots of oil will be more or less separate, care being taken not to leave puddles of oil in the depressions or channels. Should such occur it is advisable to have a man with a broom to broom these away, so that they will not be splashed by traffic or stain the clothing of pedestrians. The road is then watched for three or four days, when the second dose is given and then allowed to rest for a while, and after a week or so the third application is made. The road is better for being prepared, channels being cleaned out, depressions levelled, and ruts more or less filled up. This, howver, is not always practical, and the road may be treated without such preparation. We have found that upon ordinary roads 1,500 gallons per mile will complete the three applications specified above, and ought to maintain the road for at-least-from one to two months. This at four cents a gallon would be \$60, and the cost of application from \$10 to \$15. This is probably less than the cost of sprinkling. A mile of road sprinkled twice a day would cost for labor alone \$1 a day at least, which would leave the road more or less muddy. It would not be dustless for more than a couple of hours, and in some cases, if very dusty and sandy, a mile of road, or little more, would require the constant attention of a man and horse and watering-cart. Should the road be in good condition and in close proximity to other roads, the man would probably do a mile of road in an hour, and \$1 a day would provide for two sprinklings per day.

Whn the cost of a large area of macadam road is considered, I think the oil would not be more expensive than the cost of sprinkling. On roads that are not much frequented by heavy traffic I consider the oil application would be exceedingly serviceable and comparatively inexpensive as a dust reducer. In setting forth the above facts as I have formed them in connection with work in the city of Toronto, I am free to admit that there is yet considerable investigation required as to the cheapest and best application to be employed. Preparations of tar have been used in the city of Boston, a mixture of oil, soap and tar in some places, and in other localities various oleaginous residues capable of a more or less admixture with water. However, they are, I think, apt to dry out more rapidly than the pure oil.

The Dominion Coal Company's output for the first six months of the year is 1,618,470 tons, against 1,922,236 ton<sup>5</sup> last year, and 1,736,951 tons the year previous.