

Mr. McCulloch is of the opinion that the most economical method of diverting this water is to raise the level of the lake permanently 10 feet and lay a 14-inch tile conduit through the ridge at a depth of 13 feet. It is proposed to construct an earth dam at the outlet of the lake to a height of 25 feet, with suitable sluiceway and spillway, and utilizing the lake for storage purposes between elevations 10 and 20 feet; the cost of the development at the lake to be \$11,000.

From the diversion weir on Cambridge Creek the water will be conducted by a pipe line 8,400 feet long with a daily capacity of 1,500,000 to a 1,000,000-gallon distribution reservoir at the city limits, at an elevation of 375 feet above the business portion of the city. This elevation is necessary in order to give suitable pressure to the higher portions of the city, the pressure on the lower or business portion being reduced by the use of pressure regulator valves on the supply mains to any desired pressure.

Distribution System.—The new mains to consist of 1,950 feet of 10-inch pipe, 6,420 feet of 8-inch pipe, and 9,000 feet of 6-inch pipe. There will be 14 new hydrants, 28 new gate valves and 2 pressure regulator valves.

In the new system under ordinary conditions the engineer favors the use of steel pipe throughout, but on account of the present abnormally high price of steel pipe (the present factory prices being 75 per cent. higher than in January, 1914, 87 per cent. higher than in 1915, and 70 per cent. higher than in January, 1916) puts a somewhat different complexion on the matter and it is felt that the merits of steel and wood pipe would have to be considered under present conditions.

It is almost impossible to get deliveries from the shops, within any reasonable limit, and the steel pipe that is used will have to be purchased from the stock held by dealers.

Wood-stave pipe is favored for the conduit pipe line from Cambridge Creek to the reservoir. This is also true of the 10-inch main from the reservoir, and in the 8-inch supply main along the bench to the corner of Spokane and Green Streets, a distance of 4,450 feet, being approximately 200 feet above the business or main portion of the town.

The estimated cost of the proposed waterworks system is \$60,000.

Sewerage System.—On account of the ease with which surface water can be handled, due to the topography and the natural drainage into the Columbia River and Trail and Gorge Creeks, which run through the city, it is not proposed now to provide for surface water in the sewers to be constructed.

A modification of the separate system of sewers is recommended,—one that takes care of all sewage proper and provides for the roof water as well.

It is proposed to empty the sewage into the Columbia River, which at Trail has an extreme low-water flow of 14,000 cubic feet per second.

On account of the scarcity of labor and the consequent high wages, the recommendation is made that the whole of the pipe be laid in one contract, so as to make it worth while for a contractor to come in with a suitable plant, the material to be excavated being very suitable for trench excavating machines.

It is proposed to construct 22,100 feet of sewers. The main sewer, being 15-inch and 12-inch, will be 1,650 feet long, while the laterals, amounting to 20,450 feet, will be 8-inch and 6-inch, the latter on steep grades on short branch sewers.

The probable cost of the proposed system will be \$40,000.

A by-law is to be submitted to the ratepayers as soon as the proposed source of supply is approved by the Provincial Board of Health.

ADDITION TO STANDARD UNDERGROUND CABLE PLANT AT HAMILTON.

In preparation for the prosperous times which the company anticipates will prevail after the close of the war, the Standard Underground Cable Company of Canada, Limited, is making an addition to its factory at Hamilton, Ont., which, when completed and equipped with the necessary machinery, will represent an investment of \$50,000. The new structure will consist of one story, with basement built of brick and concrete, and will be 125 by 120 feet, giving a total increase in floor space of 30,000 square feet. Ample fire protection apparatus is also provided for, which includes a complete automatic sprinkler system.

The new building will be devoted exclusively to the uses of the wire-drawing department, and in addition to housing the former equipment will contain material additions of new machinery of the latest design capable of drawing wires ranging in size from No. 40, B. & S. C., which is about the thickness of a hair, to the largest size of trolley wire; also machines for grooving trolley wire and for rolling flats and squares, such as are used in the manufacture of magnet wire. There will also be two new "Bright-annealing" furnaces for annealing or softening the wire after it has been drawn. This addition will not only give room for a considerable increase in the output of the wire-drawing department, but the space released will allow for expansions in the stranding and cabling departments.

All of the machinery in the new plant will be electrically operated by three-phase alternating current motors of 550 volts, 25 cycles, the current being furnished by the Hamilton Hydro-Electric Department and carried from the overhead transmission lines of the department to the transformers on the company's property by underground cables. Power is now taken for other uses in the plant from the Dominion Power and Transmission Company. The architects are Prack and Perrine, of Hamilton.

COBALT ORE SHIPMENTS.

The following are the shipments of ore, in pounds, from Cobalt Station for the week ended March 9th, 1917:—

Trethewey Silver Mines, 37,297; Hudson Bay Mine, 65,382; Kerr Lake Mining Company, 86,619; Coniagas Mine, 78,689; La Rose Mine, 87,424; Dominion Reduction Company, 149,000. Total, 504,411 pounds, or 252.2 tons.

The total shipments since January 1st, 1917, now amount to 4,289,973 pounds, or 2,144.9 tons.

An illustrated address was given on March 14th, at the Shaughnessy Building, by Mr. George M. Berry, chief chemist of the Holcomb Steel Company, of Syracuse, N.Y., and inventor of the process by which hydro-electric power has been commercially applied to metallurgy. The lecture was arranged by Arthur D. Little, Limited, under the auspices of the Canadian Pacific Railway, with a view to showing what could be done to use undeveloped water powers in Canada to develop other industries, and especially the electrical making of high grade steel.