

the strait and at the entrance to the bay, so as to give a continuous line of communication from Port Nelson and Port Churchill to the Atlantic; but the construction of these will not commence until next year. The charting of Hudson's Strait is also being done by the steamer Acadia, while other Government vessels are taking soundings and mapping the harbors at Port Nelson, Fort Churchill, and at the mouth of the Nottaway River. Two lighthouses are to be commenced this year, one on each side of the entrance to Port Nelson, while another one will be built on a newly-charted shoal some miles out in the bay. The charting being done at the mouth of the Nottaway River is preparatory to the construction of the proposed railway from there south-east to the National Transcontinental, in connection with the alternative route from Port Nelson across the northern end of James Bay and thence by rail to Montreal, for which last season an appropriation of \$1,000,000 was passed by the Government for preliminary surveys.

Edmonton, Alta.—The city commissioners of Edmonton have decided to allow the firm of Sanderson and Porter of New York, and all other concerns intending to submit offers for furnishing power to the city, four weeks from July 21 in which to prepare and submit these, which shall include in the unit prices given the operation and maintenance by the tenderers of the present steam plant as a stand-by plant, the city to retain ownership of the same. To such prices must be added the annual interest and sinking fund incident to the investment of the plant. Also, all firms must submit a statement of financial backing, a certificate or title of lease of the waters and poundage rights, plans, profiles, level covering, the development contemplated, the head proposed to be developed, length of study of the proposed development, and the name of the engineers who will carry out the work; the city to audit all accounts of construction, from the inception to completion; the company to agree not to capitalize by bonds, stock, or otherwise in excess of the actual construction costs; the city to participate in all profits annually over 8 per cent., and the city to have the right to audit all operating accounts as well as to be given power to decide other questions which the commissioner of operation considers imperative in protecting the city's business.

Victoria, B.C.—A report on last month's operations at the Ogden Point breakwater states that such remarkable progress has been witnessed that the foundations of the breakwater were in view at extreme low tide inshore and everything was in readiness for the commencement of the concrete structure, which will be a huge reinforced wall stretching far out into the harbor. The official statistics for the month of July show that no less than 361,131 tons of rubble were dumped on the site of the breakwater. The actual figures are as follows: core, 22,545 tons; rubble, 338,586 tons. The total rock dumped during the last three weeks of the month exceeded the record month of last year. A grand total of 1,604 tons of granite blocks were also laid by divers during the month just closed. At the present time the operations of the divers are confined to the shore end of the breakwater, where huge granite blocks, weighing anything from 5 to 15 tons each, are being laid in courses; and as the rubble farther out is brought up to the desired level, these courses will be continued seawards. Good progress is also being made in dumping rock at the site of the new piers under construction by Grant Smith and McDonnell. Throughout July a total of 13,332 tons of rubble were deposited; and much faster progress will be maintained now that everything is complete for the shipment of rock from the new quarry at Esquimalt.

Ottawa, Ont.—Tests made recently by the city bacteriologist of Ottawa, Mr. Jos. Race, show that Ottawa River water

is four times superior to Ottawa well water in purity. The tests have been made to ascertain whether the supply of water from the river is reasonably safe for drinking and domestic purposes. Mr. Race concludes his report by sanctioning its use as such. Discussion of the report which has been furnished by R. L. Haycock, acting waterworks engineer, to the waterworks committee, on the same question was adjourned until next week when the committee will also make a report to the city council. In the meantime, Mr. John McRae, civil engineer of Ottawa, will co-operate with Mr. Haycock in preparing estimates of the costs of a number of changes which Mr. Haycock suggests in his report. One of the most radical changes proposed is the removal before winter of the concrete beams supporting the intake pipe recently relaid, which, in the opinion of the acting waterworks engineer, will increase the accumulation of ice and frazil and endanger the safety of the intake pipe. An estimate will be made also on the cost of installing an auxiliary electrical pump at the Queen Street West station for use in case one of the hydraulic set of pumps should break down. Further estimates will be made on the costs of the projects to connect to the 40 and 42-inch intake pipes and to join the two aqueducts at the pumphouse.

Medicine Hat, Alta.—About one-half of the great irrigation canal which has been under construction by the Southern Alberta Land Company for the past 5 years at an expenditure of close to \$5,000,000, has been sufficiently completed to hold water; and about two weeks ago water was allowed to flow into Lake McGregor. The entire undertaking is so well advanced that only about \$250,000 will now be necessary to complete the system. The work of constructing the canal begins about 22 miles southwest of Gleichen, where a big dam of cement work has been constructed across the Bow River and forms the intake of the canal. From there it continues about 30 miles to Lake McGregor. This lake is about 22 miles long, is formed by the construction of two huge earth dams across what is known as Snake Valley, and is about 40 feet high at the north end and 30 feet at the south; while in places it will be about 2 miles wide. It is estimated that from 3 to 4 months will be required to fill this area for the requirements of the immediate future. From the lake, the canal continues south and east along the Little Bow River, the entire length of the channel being in the neighborhood of 180 miles. The major portion of the work on the east end is now nearing completion, but it is not probable that it will be in readiness to turn into the lower canal until some time next spring. In the construction of this canal there have been some most difficult engineering problems; and some of the heaviest of the work has had to be replaced.

Esquimalt, B.C.—It is expected that an early date will see the completed establishment of the Esquimalt sewerage system. About \$60,000 has so far been expended. The municipality was divided into two sections—B and D—for the present sewerage work. Section B empties into the north-western main, which is the Victoria main outflowing at Macaulay Point. D section enters the sea at the foot of Grafton Street. The contractors for the B section, Messrs. Agnew and Young, had 9 miles of pipe to install, of which they have laid 4½ miles. Most of the light work has been done; and when the rock boring and more difficult excavating for the tunnel through the Macaulay Rocks has been completed—which work is expected to take about 2 months' time—sewer connection will be established for householders through the local sewers with the northwest sewer. City Engineer Rust states that the rock excavation work is proceeding very satisfactorily, and that up to the present the cost has been somewhat less than the estimate. In D section 2 miles of pipe had to be laid, of which 1½ to 1¾ have been