

Two hundred and thirty men are employed on the works.

Roxburgh.—Following the announcement of the selection of the site of the dam at Tamblyns' Orchard in March last, detailed investigation work was concentrated at this point.

Surveys have been made for cableways to span the gorge. Twin cableways of 1,680 ft. span are being obtained.

Exhaustive tests of gravel from Commissioner's Flat have proved it to be of satisfactory quality and adequate in quantity. Designs for a washing and screening plant at Commissioner's Flat and for concrete plant with stock-piles at elevation 600 on the left bank are well forward.

Work on the diversion channel began on 27th June, 1949, with the removal of the orchard trees. Excavation started on 4th July, 1949. Using D8 tractors and 12-cubic-yard carryalls, 235,000 cubic yards of topsoil and gravel had been removed to expose the rock surface by mid-September. Carryalls and "Tournapulls" were tried, but with wet ground conditions and loose gravel these were not suitable for the work.

Despite early troubles with tungsten-carbide drill-bits and alloy drill steel, some 50,500 cubic yards of rock have been removed to bring the diversion channel excavation down to elevation 293 at the intake end and 305 at the spillway block. At the upstream and downstream sides of the diversion channel, $2\frac{1}{2}$ -cubic-yard shovels and "Euclid" wagons have stock-piled the material.

The rock at the upper levels is weathered, as was expected, but at the lower levels it is sound and is breaking away from line-bored holes to leave satisfactory side walls. Jackhammer boring has totalled 50,000 ft. and wagon drilling 78,500; 36,700 lb. of explosive and 80,000 ft. of primacord have so far been used in the diversion channel. Tungsten-carbide bits have justified their use and have proved superior to "throwaway" bits in this type of rock.

Some 8,000 cubic yards of stripping have been removed from the right abutment face to expose the rock. Work is in hand to detail the thickness of the broken rock.

Two single men's camps with a social hall and post-office have been constructed on the right bank downstream from the permanent village area, one to house 250 men and the other 150 men. These are fully occupied. No. 3 camp is almost ready for occupation and will house a further 250 men. Twenty-eight cottages have been completed in the construction village and a further sixty-seven are in course of erection. Sewerage for the camps and village has been installed as required, as has water-supply from Elbow Creek. A 100,000-gallon rock reservoir (for incorporation in the permanent village supply) has been built and a 1,000,000-gallon reservoir for the construction village water-supply on the left bank. The old miners' dam taken over from Tamblyn has also been restored to hold 1,000,000 gallons.

Eleven thousand six hundred feet of sewer lines and 17,700 ft. of water-mains have been laid; 5,000 ft. of construction village roads have been formed and 9,200 ft. access roads have been built.

During the year an administrative building, 5,000 square feet (of T.C.I. huts), a main store (100 ft. by 84 ft.), and a mechanical workshop (100 ft. by 64 ft.) with an associated 40 ft. by 30 ft. tool-sharpening shop, garage, &c. have been built.

Construction of Substations

Otauhu.—The storm-water and oil drainage systems have been carried a stage further, but progress is retarded by shortages of materials. The driving of the fifty-nine piles each 70 ft. in length for transformer pad foundations was completed in April, 1949. Cracked piles in the condenser building foundations have been repaired and a concrete mat for construction purposes has been laid. A contract for the erection of the condenser building was let. The erection of fourteen permanent cottages by the