

1949
NEW ZEALAND

DEPARTMENT OF LANDS AND SURVEY

Drainage Operations in Hauraki Plains

REPORT FOR THE YEAR ENDED 31st MARCH, 1949

*Presented to Both Houses of the General Assembly Pursuant to Section 20 of the
Hauraki Plains Act, 1926*

Department of Lands and Survey, Wellington, 22nd June, 1949.

SIR,—

I have the honour to present herewith the report of the Chief Drainage Engineer on operations carried out during the past year on the Hauraki Plains in accordance with the provisions of the Hauraki Plains Act, 1926.

I have, &c.,

D. M. GREIG,

Director-General of Lands.

The Hon. the Minister of Lands.

REPORT OF THE CHIEF DRAINAGE ENGINEER

SIR,—

I have the honour to submit the forty-first annual report on drainage and land-development operations carried out on the Hauraki Plains during the year ending 31st March, 1949.

The season 1948-49 has proved an exceptionally favourable one for the dairying industry on the Hauraki Plains, as indeed it has practically throughout the Auckland district. The winter was particularly mild, no excessive rainfall was recorded, and no serious flooding occurred. During the summer the rainfall was well distributed, without any long dry periods. Pasture-growth has been exceptionally good, and on the Plains a record hay crop has been harvested. In consequence of these favourable conditions it is anticipated that the dairy production this year from the Hauraki Plains will prove to be an all-time record.

The rainfall for the year ended 31st March, 1949, as recorded at Kerepehi was 48.28 in., which is slightly above the average for this station, which, taken over the last thirty-six years from March, 1913, was 43.75 in. The wettest month was May, with 6.65 in., and the driest was December, with 2.17 in. The number of wet days was 182, and a rainfall exceeding 1 in. in twenty-four hours was recorded on six occasions, the heaviest being on 1st April with 2.10 in.

The following is a schedule completed from information supplied by dairy companies and merchants setting out the approximate quantity and value of farm production from the Hauraki Plains for the year 1947-48.

For the purpose of comparison figures for the year 1946-47 are also given:—

Schedule

	1946-47.		1947-48.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Butter (tons)	2,738	393,757	2,942	650,722*
Cheese (tons)	4,269	346,335	4,829	594,731*
Plus farm-cost allowance on above		153,410		
Pigs	5,021	22,053	8,000	45,000
Bobby calves	11,539	9,457	10,814	15,690
Cattle, sheep, &c.	24,294	82,639	25,039	103,561
Total		1,007,651		1,409,704

* Includes farm cost allowance.

Difficulties are still being experienced in obtaining sufficient labour to man the works on the Hauraki Plains, and consequently very little new work has been possible during the year, nearly all available labour being concentrated on maintenance. The normal amount of drain-cleaning in the Hauraki Plains Rating District has been carried out during the year, and a start has been made with the long-delayed widening and deepening of the main outlets carrying hill-water across the peat areas to the Piako River and the Maukoro Canal. This work has been made possible by the fact that the stop-banking programme on the foreshore and the Piako River is nearing completion, and it has been possible to transfer excavators to other urgent work.

Six of the Department's drag-line excavators have been working on the Hauraki Plains during the year. One has been working on the Piako River right bank and has raised nearly two miles of stop-bank during the year; one has been removing *Poa aquatica* weed-growth and improving and deepening the Puhanga Canal, and the other four have completed the widening and deepening of over ten miles of main outlet drains as mentioned above. A new Jacques J 15 $\frac{3}{4}$ cubic-yard excavator was purchased during the year. This machine is very similar to the R.B. 10's at present in use, and is operating very satisfactorily. At the end of June, 1948, an R.B. 10 was transferred to the Hauraki Plains from the Waihi district, when a larger and more suitable plant was procured for the latter area. This R.B. 10 was in a bad state of repair and required complete overhaul. Spare parts proved so difficult to procure that the final assembly is not yet complete, but it is hoped to have this plant operating in the near future. An additional machine was also used during the year, this being a light R.B. 10 excavator belonging to a private firm which completed on contract the reconstruction of 87 chains of the foreshore stop-banks.

Hereunder is a *résumé* of the work done by each excavator during the year under review:—

No. 15 Bucyrus Excavator.—This machine commenced at the beginning of April, 1948, the widening and deepening of one of the main outlets for Kerepeehi Block, and, starting from the two barrel flood-gate, had by the end of June completed to the main road a distance of 55 chains and excavated 8,800 cubic yards in 48 working-days. The plant was then moved to the Puhanga Canal, where it commenced removal of *Poa aquatica* and willows, and the improvement to the canal. By the end of March the west bank had been completed for a length of 127 chains and 32,260 cubic yards had been excavated. For the full year 41,060 cubic yards of spoil have been handled by this machine in 216 working-days, at an average cost of 10½d. per cubic yard.

No. 16 Bucyrus Excavator was transferred from the Piako River left-bank stop-bank early in April to raising and improving the right-bank stop-bank for the Hauraki United Drainage Board. Very good progress has been made by removing 26,510 cubic yards of spoil in completing 153 chains of bank in 171 working-days, at an average cost of 1s. 2d. per cubic yard.

No. 29 Bay City.—At the beginning of April, 1948, this machine was assisting with the construction of the intake drain to the new pump-station being constructed for the Thames Valley Drainage Board at Awaiti South. This work was continued during April, and was somewhat delayed through the plant becoming badly bogged in a burnt-peat area. During May the machine assisted with excavation for and installation of the discharge pipes for the pump-station. In June it was brought to the workshop at Kerepeehi for complete overhaul, which was completed at the end of July. The plant was then moved to Waitakaruru and commenced the widening and deepening of Rountree's Drain. This work was finished on 20th August, when 125½ chains had been completed and 18,196 cubic yards of spoil removed. While the plant was in this vicinity the machine was used on the reconstruction of a private drain known as Willow Drain, and in improving 64 chains removed 4,987 cubic yards of spoil. The cost of this work was met by the settlers. The average cost of the excavation of 26,628 cubic yards by this machine for the year was 1s. 4d. per cubic yard.

No. 31 R.B. 17 Excavator.—This machine completed on 2nd April, 1948, the main southern stretch of stop-banks being reconstructed for the Hauraki United Drainage Board on the right bank of the Piako River. The plant was then returned to Pipiroa, where, after annual overhaul, it completed the reconstruction of a short stretch of 4 chains of stop-bank near the eastern end of the Pipiroa Ferry before being transferred to the Kerepeehi district. Here the machine was used for the reconstruction of the Waikoura Drain, one of the large drains taking hill-water across the plains from the western ranges. This work was completed just before the end of March, when 240½ chains had been done and 36,932 cubic yards excavated. After annual overhaul work will commence on improving the Torehape Road Drain, another hill-water channel requiring widening and deepening. The average cost of excavation of 38,266 cubic yards by this machine for the year was 8½d. per cubic yard.

No. 35 P. and H. Excavator.—This machine continued with the cleaning and deepening of 77 chains of outlet drains in the Kerepeehi Development Block during April. After overhaul and the construction of a set of dredge pads at the workshops the plant was shipped by punt to commence work on the widening and deepening of Central Drain, a main waterway carrying hill-water from the western ranges. This work commenced in June, and by the end of March 174 chains had been completed and 20,681 cubic yards of spoil excavated at an average cost of 1s. 4d. per cubic yard.

No. 34 R.B. 10 Excavator.—This plant was transferred to this district from Pongakawa at the end of June, 1948. The whole machine was in a very bad state of repair, and a complete overhaul was necessary. This work is being carried out in the workshop at Kerepeehi. Owing to the difficulty in procuring parts the work has been considerably delayed, but it is hoped that the machine will be ready to recommence work in the near future.

No. 40 Jacques Excavator.—This is a new plant of the R.B. 10 class which arrived in the middle of February, 1949. Considerable damage was done to the cab and superstructure during shipping from Australia, and after this had been repaired in the workshop at Kerepeehi the machine commenced the work of removing *Poa aquatica* and other weed-growth from the Pouarua Canal, near Ngatea. Excellent progress had been made using the tyne drag bucket, and by the end of March 69 chains of this canal had been cleaned.

McRobbie Bros. R.B. 10 Excavator.—This is a hired machine engaged to assist in the urgent work of reconstruction of the foreshore stop-banks from the Kairito Canal eastwards towards Waitakaruru. Between 1st April, 1948, and 5th May 30 chains of bank were completed by this plant. Owing to unseasonable weather, work was postponed until the end of December, when another contract was let for a further 57 chains, which was completed on 22nd February last. During the year this plant excavated and placed in stop-bank 12,876 cubic yards of spoil at an average cost of 1s. per cubic yard.

The flood-pumping station constructed in the Awaitei South district for the Thames Valley Drainage Board was completed about June, 1948, and the settlers have been very pleased with the results achieved. The area served by the pumps was kept free of flood-water all the winter, and the settlers are now cultivating and sowing in good pasture the low-lying ground which was formerly only suitable for summer grazing. The firm who supplied the pumps and motors for this station has not yet been able to provide motors of the correct horse-power, but have loaned the Department substitute ones with which to carry on. The installation of the correct horse-power motors will complete the station.

The driving of sheet piling on the intake of the Pipiroa Flood-gate, as mentioned in last year's report, was completed in May, 1948, and has proved entirely satisfactory.

No economical means of dealing with the rapid spread of the water-weed, *Poa aquatica*, have yet been discovered. Experiments being conducted by the Department of Agriculture in an attempt to discover a chemical agent capable of controlling the weed have so far been unsuccessful. In the meantime mechanical methods, such as a drag-line excavator and a grader and tractor, are being used.

On the land-development blocks and the farms being prepared in this district for the settlement of ex-servicemen very good progress has been made during the year. As evidence of the good season experienced, I would mention that 30,000 bales of hay were harvested from blocks in the Hauraki Plains district which are controlled from Kerepeehi. Development work during the year included 750 acres of new grass sown, 1,100 acres of heavy harrowing, 350 acres of stumping, and the crushing and diskings of 750 acres of scrub. Some 1,200 chains of new fencing were completed and the laying of 4,000 ft. of water-mains, and 12,000 ft. of internal piping was carried out.

Roading completed during the year included the forming and grading of 115 chains of the Reservoir Road (south side) in preparation for metalling, the regrading of 100 chains of the metalled portion of the same road, and 110 chains of the metalled portion of the Awaitei Canal Road (west side). The re-forming and grading of 550 chains of clay roads in the Pouarua Block, the formation and metalling of 5 chains of road in the Kerepeehi Block, and the metalling of about 20 chains of the Torehape Road was also carried out.

The ferry service over the Piako River at Kaihere was maintained satisfactorily during the year. A new pontoon was constructed by an Auckland firm and towed to Kerepeehi. After transferring all useful gear from the old pontoon to the new one, reconditioning the winding-gear, and fitting a new engine the ferry service was again brought into operation on 6th December, after being closed since 5th November to enable this change-over to be completed. The new ferry has been entirely satisfactory, and the service has been uninterrupted since it was brought into operation.

The flaxmill at Kerepeehi, which is engaged in milling flax from natural and planted stands on Crown land near the Piako River, continued its operations during the year. For the year ended 31st March, 1949, this mill handled 2,086 tons of green leaf, from which the royalties payable to the Crown amounted to £260.

Owing to the even spread of rainfall during the winter, the flood-pump on the Kerepeehi Block was only required to operate for a total of 119½ hours, which is one of the shortest annual operating times on record since the completion of the station in 1935. Nevertheless, this short running-time was sufficient to keep the stop-banked area of 3,890 acres served by the pump free from flooding.

The workshop staff of fitters, blacksmiths, &c., has been fully engaged in maintaining excavators, cars, trucks, tractors, and machinery. The carpenters completed the cottage under erection at Kerepeehi, and, in addition to maintenance of all buildings, have reconstructed two cow-sheds, built two piggeries, reconstructed the Kaihere Ferry, added a useful extension to the fitting-shop, and completed the construction of the Awaitei South pump-station.

Arrangements have been made for the field and engineering work associated with this Department's drainage activities to be undertaken by the Ministry of Works as from 1st April, 1949.

The principal works carried out on the Hauraki Plains during the year are listed hereunder:—

	Miles.	ch.
Drains cleaned by manual labour on wages	69	63
Drains cleaned by manual labour on contract	30	68½
Drains widened and deepened by manual labour on wages	20	34
Drains widened and deepened by manual labour on contract	0	43
New drains constructed by manual labour on contract	4	59½
Canals widened and deepened by excavator	1	47
Canals cleaned by excavator	0	69
Drains widened and deepened by excavator	9	52
Stop-bank raised by excavator	3	6
Roads formed by power-grader	2	10
Roads graded by power-grader and bulldozer	9	40
Roads metalled	0	25
	Acres.	
Area harrowed by tractor	1,100	
Area stumped by tractor	350	
Area crushed and disked by tractor	750	
Area sown in grass	750	

Other work included the completion of Awaitei South pump-station; repairs to Pipiroa flood-gate; completion of cottage; erection of access bridges, culverts; installation and maintenance of water-supplies; painting and repairs to buildings; repairs and maintenance of excavators, trucks, tractors, pumps, flood-gates, machinery; eradication of willows and noxious weeds; and care of stock and pastures.

EXPENDITURE AND RATES

Maintenance expenditure for the year, £4,109. Rates struck, £3,366.

Rates collected, including arrears, £3,350.

Net expenditure on construction works, £5,998.

The amount shown as expenditure on maintenance and construction works may be subject to slight variation on completion of accounts.

I have, &c.,

E. TAYLOR,

Chief Drainage Engineer.

The Director-General of Lands, Wellington.

STATEMENT OF ACCOUNTS

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