

1948  
NEW ZEALAND

---

DEPARTMENT OF LANDS AND SURVEY

# Drainage Operations in Hauraki Plains

REPORT FOR THE YEAR ENDED 31st MARCH, 1948

---

*Presented to both Houses of the General Assembly pursuant to Section 20 of the Hauraki Plains Act, 1926*

---

Department of Lands and Survey, Wellington, 24th June, 1948.

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,

Under-Secretary for Lands.

The Hon. the Minister of Lands.

---

## REPORT OF THE CHIEF DRAINAGE ENGINEER

SIR,—

I have the honour to submit the fortieth annual report on drainage and land-development operations on the Hauraki Plains. The report covers the year ending 31st March, 1948.

Despite the handicaps imposed by the prevailing shortages of materials and labour, I have to report that the district has experienced a very good year. Dairy production from all parts of the Hauraki plains is increasing, and the season has on the whole been very favourable for production. A slight drought between the middle of January and the middle of March, when less than 1 in. of rain fell, caused production to fall off somewhat. A severe plague of crickets also affected production this year. These pests have done considerable harm in some parts of the plains, but I understand that a satisfactory method of control has now been developed by the Department of Agriculture.

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 1946-47. For the purpose of comparison figures for the year 1945-46 are also given:—

*Schedule*

	1946-47.		1945-46.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Butter (tons) .. .. .	2,738	393,757	2,186	313,997
Cheese (tons) .. .. .	4,269	346,335	3,617	294,713
Plus farm-cost allowance on above .. .. .		153,410		117,087
Pigs .. .. .	5,021	22,053	4,023	17,580
Bobby calves .. .. .	11,539	9,457	13,337	9,556
Cattle, sheep, &c. .. .. .	24,294	82,639	27,025	95,944
Total .. .. .		1,007,651		848,877

The rainfall of 38.31 in. was below average and was evenly distributed throughout the year. Because of the even distribution of the rainfall no serious flooding occurred during the winter, though some tidal overflow of the stop-banks at Waitakaruru and Miranda was caused by northerly winds at times of high spring tides.

The number of men employed on the Hauraki Plains has not varied greatly from last year, and additional labour is still required. The main reasons for this shortage of labour are to be found in the high wages obtainable in private employment to-day, and the lack of accommodation for married workmen on our works at Kerepeehi. During the year one house was erected at Kerepeehi. This was built from a disused hut and a small cottage that was surplus to requirements on Opou Block runoff. Further new building has not been possible owing to difficulty in securing materials and to the fact that the small gang of carpenters are constantly employed on maintenance of existing buildings and renovations of buildings on rehabilitation blocks.

Due to shortage of labour, most of the work carried out this year comes into the category of maintenance work. The normal amount of drain-cleaning in the area covered by the Hauraki Plains Rating District has been carried out, but there still remain considerable arrears of work, such as widening and deepening of drains rendered inefficient by subsidence of the peat substrata. This is particularly noticeable in the case of outlets carrying the drainage from the western hills across the swamp to the Piako River and other main outlets. It is hoped to make a start in the near future on the reconditioning of these outlets. With the end of the programme of stop-bank improvements in sight it will be possible to divert more plant to drain improvement in the future.

Four drag-line excavators have been employed on the Hauraki Plains for the whole year. Two of these have been used for raising the stop-banks on the Piako River, one working on each bank, and between them they have completed a further 3 miles 54 chains of bank. One of these machines will have completed its job about the end of April and will then be transferred to drain-improvement work on the main drains. Another plant was working almost the whole year on Waitakaruru Stream Canal, widening and deepening the channel and raising the stop-bank on the right bank. This job was discontinued on the 2nd March last, when a further 116 chains had been improved so that the plant could be used for constructing a new drain for the Awaitei South pumping scheme. When this work is finished this machine will be transferred to work on improvements to main outlet drains. The fourth plant continued with the work of removing *Poa aquatica* from the Awaitei Canal and the improvement of the channel and berms. This plant completed this work at the end of the year, having cleared a further 525 chains of canal bank. It is now undergoing an extensive overhaul, after which it will be used for improving some of the large outlet drains on Kerepeehi Block.

A fifth excavator commenced work during the year. This was a medium-sized drag-line purchased second-hand last year from the War Assets Realization Board. The plant was not in very good order when purchased and had to be completely dismantled and reconditioned. The procuring of spare parts so delayed the work that the machine did not go into service until January last. Since then the plant has been engaged on widening and deepening drains on Kerepehi Extension Block No. 1. This work should be finished very soon, and the plant will also be transferred to work on improvements to main outlet drains. During the year the services of a private contractor using a small excavator were also secured, and this machine has been engaged for the last three months on the raising of the foreshore stop-banks from the Kairito Canal towards Waitakaruru. This plant has done an excellent job and has proved a welcome, though temporary, addition to our fleet. One further drag-line excavator has been utilized during the year. This is a small plant owned by the Thames Valley Drainage Board and has been employed on the construction of a new intake drain for the flood pumping station being erected at Awaiti South.

*Comparison of Dredge Costs*

Year.			Cubic Yards.	Cost per Cubic Yard.	Year.			Cubic Yards	Cost per Cubic Yard.
				d.					d.
1923-24	..	..	508,654	7-27	1936-37	..	..	171,717	8-69
1924-25	..	..	822,286	5-86	1937-38	..	..	261,347	5-72
1925-26	..	..	856,653	6-32	1938-39	..	..	266,402	6-70
1926-27	..	..	647,182	7-42	1939-40	..	..	142,517	9-48
1927-28	..	..	652,413	7-32	1940-41	..	..	195,322	5-90
1928-29	..	..	619,911	6-54	1941-42	..	..	168,644	9-09
1929-30	..	..	595,565	6-25	1942-43	..	..	88,867	9-23
1930-31	..	..	536,692	8-32	1943-44	..	..	131,934	7-85
1931-32	..	..	390,611	7-99	1944-45	..	..	171,693	9-13
1932-33	..	..	200,954	8-00	1945-46	..	..	121,595	8-79
1933-34	..	..	116,224	5-96	1946-47	..	..	79,186	11-79
1934-35	..	..	52,517	10-02	1947-48	..	..	144,126	10-50
1935-36	..	..	164,046	8-26					

Construction of the pumping-station for the Thames Valley Drainage Board which was mentioned in last year's report is now well in hand. The concrete suction bay and the pump-house have been completed, and the intake drain is about three-quarters finished.

This station will have two 5,500-gallon-per-minute, automatically-operated electrically-driven flood-pumps draining an area of 1,200 acres between the Awaiti Canal and the Awaiti South Road. One of the pumps has been received from the makers, and when the other pump and the necessary motors and electrical equipment arrive they can be installed, together with the discharge-pipes and flood-gate.

Repairs to the Pipiroa flood-gate now being carried out are necessary to deal with seepage under and around the structure resulting from the disturbance of the ground when reconstructing the stop-banks.

Extensive use was made this year of the new D4 tractor fitted with bulldozer blade and hysler winch. It was employed for some months on the construction of the Awaiti South pumping-station, and also for pulling willows out of drains on Waitoki Block, for building roads and tracks on the Opou, Pouarua, and Kerepehi Blocks, and for hauling out and loading timber logs for milling.

Considerable difficulty was experienced again this year in inducing contractors and settlers to tender for the annual drain-cleaning, and consequently a considerable amount of this work will have to be done on a wage basis. It is becoming increasingly evident that in the near future some mechanical means will have to be found to cope with the work. Considerable success is being achieved by the Overseer at Thornton with the cleaning of the larger drains by using a drag-line equipped with a tyne drag

bucket, and it is apparent that as soon as plant can be made available a start should be made with similar equipment in this district. The formidable water-weed known as *Poa aquatica* is spreading with alarming rapidity in many of the main outlets, and if not checked in the near future is going to greatly increase the cost of maintenance. The Department of Agriculture is conducting experiments in an attempt to discover a means of eradicating the weed, but so far the results point to a mechanical means of control as being the most economical.

The land-development blocks in this district have had a very good year. Except for those areas being prepared for the settlement of ex-servicemen, most of the work has been confined to essential maintenance of pastures, fences, and drains, the care of the 3,300 cattle and 7,900 sheep which are grazing on the areas, and the control of noxious weeds and swamp growth. On the areas being prepared for settlement good progress is also being made, though considerably hampered by shortages of materials and labour. It is hoped to have about six farms prepared for settlement next season. During the dry period experienced in January and February extensive peat fires broke out on the Pouarua Block, and some thousands of acres of swamp were swept by fire. This was mostly confined to the undeveloped areas, thanks to the efforts of the men and staff, who spent long hours fighting and controlling the fires. The fire did, however, penetrate in to some of the adjoining private land on the Kaihere Road, where it burned for many weeks in the dry peat and necessitated the employment of men for long periods on patrolling and subduing the fire.

The ferry service over the Piako River at Kaihere was maintained during the year. The ferry punt is now badly deteriorated, but a contract has been let for the construction of a new punt, which should be available in the near future; it is being built in Auckland, and when completed will be towed to Kerepeehi, where the final fittings of engine, gates, rails, &c., will be carried out.

The flaxmill established near Kerepeehi is still in operation, and during the year milled 1,943 tons of green leaf from natural and planted flax grown on Crown Land in the district. The royalties payable to the Crown amounted to £243.

The flood pumping station on the Kerepeehi Block was not required to operate extensively last winter, the total operating hours amounting to 239½. This station is required to remove accumulated rain-water from the stop-banked portion of the Kerepeehi Block during high levels of the Piako River when gravity discharge is not possible for long periods. The limited use made of the station last winter indicates an even spread of rainfall and freedom from prolonged river floods.

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

*Schedule of Principal Work carried out on the Hauraki Plains for the Year ended 31st March, 1948*

						Miles. ch.
Drains cleaned by manual labour	..	..	..	..	..	108 66
Drains widened and deepened by manual labour	..	..	..	..	..	11 21
Canals widened and deepened by machine	..	..	..	..	..	1 36
Drains widened and deepened by machine	..	..	..	..	..	1 35½
New drains constructed by machine	..	..	..	..	..	1 75
Canals cleaned of <i>Poa aquatica</i> growth by machine	..	..	..	..	..	6 45
						Acres.
Area harrowed by tractor	..	..	..	..	..	910
						Miles. ch.
Roads formed by tractor	..	..	..	..	..	1 2
Tracks formed by tractor	..	..	..	..	..	2 40
Roads graded by tractor	..	..	..	..	..	3 30
Roads graded by power grader	..	..	..	..	..	8 40
Raising stopbanks with dragline excavator	..	..	..	..	..	3 54

Other work has included the construction of the Awaiti South pumping-station ; one new house ; five new bridges ; several single men's huts ; the dismantling of one house, one cottage, two old Public Works Department huts and two sheds ; the reconstruction of two bridges, one truck body ; the maintenance of all plant, machinery, tools, buildings, flood-gates, pumping-station, water-supplies, and roads ; eradication of noxious weeds ; care of pastures and attention to stock.

#### EXPENDITURE AND RATES

Maintenance expenditure for the year, £3,765.

Rates struck, £3,366.

Rates collected, including arrears, £3,507.

Net expenditure on construction works amounted to £3,002.

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 Under-Secretary for Lands, Wellington.

#### STATEMENT OF ACCOUNTS

A statement of accounts is published in parliamentary paper B.-1 [Pt. IV].

*Approximate Cost of Paper.*—Preparation, not given ; printing (563 copies), £12 10s.

---

By Authority: E. V. PAUL, Government Printer, Wellington.—1948.

*Price 6d.*]

