

1935.
NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.
DRAINAGE OPERATIONS IN HAURAKI PLAINS.

REPORT FOR THE YEAR ENDED 31ST MARCH, 1935, TOGETHER WITH STATEMENTS OF ACCOUNTS.

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

Department of Lands and Survey, Wellington, 1st July, 1935.

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.,

W. ROBERTSON,

Under-Secretary for Lands.

The Hon. Sir E. A. Ransom, Minister of Lands.

REPORT OF CHIEF DRAINAGE ENGINEER.

SIR,—

I have the honour to furnish the twenty-seventh annual report on the land drainage and development works carried out on the Hauraki Plains area during the year ending 31st March, 1935.

As the result of an exceptionally low midsummer rainfall there was a slight decrease in dairy-production compared with last year, instead of the previous average annual increase of about 12 per cent. due to normal expansion of farming activities. The Hauraki Plains settlers, who have always been a strongly progressive community, are rapidly developing various adjuncts to dairy-farming, so that the serious consequences of decreased returns from butterfat have to some extent been reduced by increased returns from other farm-products. Attention is being focused on pig-raising, and this branch of production has now reached considerable proportions in this district. The undoubtedly attractive possibilities for improved farm-income offered by lamb-fattening has been mentioned in previous reports and is repeated in the hope that it may lead to more development in this direction.

As an approximate indication of the volume of production from the reclaimed swamp lands the following list has been prepared from the returns kindly supplied by the dairy factories and other concerns handling most of the produce of the district. The production figures for the year 1933-34 are also given in parentheses:—

						Tons.	Tons.
Butter	..	..	..	..	..	2,975	(3,036½)
Cheese	..	..	..	..	..	2,698	(2,895½)
Flax	..	..	..	..	..	139	(72½)
						No.	No.
Calves	..	..	..	..	..	23,262	(22,396)
Miscellaneous stock	..	..	..	..	..	5,707	(5,790)
Cargo received and shipped from the Piako River and Waitakaruru							
amounted to 11,358 tons.							

These figures are by no means complete and do not include the large and increasing quantity of live-stock sold at sales outside the district, as no records of these sales are available.

An analysis of the dairy-factory returns shows a steadily increasing volume of winter production, and this is a satisfactory indication that the initial difficulties inseparable from the development of reclaimed swamp lands are being reduced each year. Production for April, May, and June of 1934 was outstandingly high, but summer production was below the average owing to the detrimental effect of the dry weather on the grass-growth. Beneficial rainfall and warmth in the autumn of 1935 helped to maintain the milk-yield, however, and a plentiful supply of winter feed is assured. The rainfall in 1934 was about the average for the district. There were no severe flood-producing storms, and winter drainage conditions were excellent. Daily rainfall records for Kerepehi since 1916 are as follows:—

RECORDS OF DAILY PRECIPITATION, KEREPEHI, HAURAKI PLAINS.

Year.	Number of Days, with given Daily Precipitation in Inches.												Total Days.	Total Fall.	Wettest Month.	Driest Month.
	0.00 to 0.49.	0.50 to 0.74.	0.75 to 0.99.	1.00 to 1.24.	1.25 to 1.49.	1.50 to 1.74.	1.75 to 1.99.	2.00 to 2.49.	2.50 to 2.99.	3.00 to 3.99.	4.00 to 4.99.	5.00 to 5.99.	6.00 to 7.00.			
1916 ..	109	12	9	7	2	3	..	1	..	..	1	..	144	52.19	Nov. 6.65	Feb. 1.05
1917 ..	131	11	4	4	3	..	1	1	1	..	..	..	156	45.61	Feb. 6.26	Jan. 0.65
1918 ..	145	14	6	4	..	1	..	..	1	..	..	..	171	44.06	Oct. 7.47	May 2.24
1919 ..	122	9	1	3	2	..	..	..	..	..	..	..	137	27.36	July 4.52	Dec. 0.89
1920 ..	85	7	10	3	1	1	3	2	..	..	..	..	112	43.16	Feb. 6.10	July 1.73
1921 ..	93	12	5	3	2	..	..	1	..	..	..	..	116	34.41	Oct. 5.89	Feb. 0.72
1922 ..	101	17	9	3	..	1	1	..	1	..	..	..	133	42.81	Feb. 6.62	April 1.73
1923 ..	151	6	5	4	..	1	1	..	..	..	..	1	169	47.04	April 9.76	Mar. 1.72
1924 ..	132	8	10	5	2	5	1	1	..	2	..	..	166	60.37	April 8.55	July 1.87
1925 ..	142	15	4	2	..	..	..	1	..	..	..	..	164	37.64	June 6.67	April 0.84
1926 ..	149	15	6	4	5	2	2	..	..	..	..	..	183	55.53	May 8.86	Feb. 1.79
1927 ..	159	10	6	5	..	4	..	..	..	..	..	..	184	45.33	July 6.29	April 2.01
1928 ..	125	7	9	2	3	2	2	1	..	..	..	..	151	47.30	May 7.52	Jan. 0.01
1929 ..	124	19	8	3	1	..	..	..	..	..	..	..	155	41.05	April 5.09	Feb. 0.74
1930 ..	131	4	2	2	3	..	2	2	..	..	..	..	146	37.72	Jan. 6.87	Dec. 0.80
1931 ..	144	10	7	..	4	..	..	..	..	2	..	..	167	43.23	July 7.80	Mar. 0.98
1932 ..	126	7	5	4	..	1	..	..	..	..	..	..	143	32.05	Feb. 4.95	Nov. 0.93
1933 ..	152	13	1	4	3	..	..	1	..	..	..	..	174	38.93	Feb. 6.54	Mar. 1.20
1934 ..	138	11	6	5	2	2	..	1	..	1	..	..	166	43.23	June 6.15	Oct. 2.05
1935* ..	24	2	2	..	..	1	..	1	..	..	..	..	30	11.11	Feb. 5.83	Jan. 0.93

* First three months of year only.

Average annual rainfall over nineteen years is 43.11 in.

Daily records of stream-flow in the Piako and Waitoa Rivers have been kept for several winters, but as there have been no severe storms for some years, during which time a considerable amount of river-improvement work has been carried out, there has been little opportunity of showing by the aid of these records the actual effect of the works under severe flood-conditions. Because of the storage effect of the natural flood-expansion basin along the middle reaches of the Piako River the channel of the lower reaches is not required to discharge the maximum run-off produced by a storm, and this introduces a complicating time-factor which must be taken into consideration when comparing the effect produced on the river by dissimilar storms. However, hydrographs of the river-discharge produced by two minor storms which occurred in September and October, 1928, show practically identical characteristics to those of two similar storms in June and July of 1934. Comparison shows the effect of the river-improvement works in a very satisfactory light. Improved tidal propagation is the most significant test of the improved regimen of a river, and, with practically the same discharge, the high-tide river-stage at Kaihere in 1934 was 2 ft. lower than 1928, and the low-tide river-stage at the same point was 3 ft. lower in 1934.

The exceptionally hot summer was to some extent responsible for the large number of troublesome fires, but the principal cause has been non-observance of the fire district regulations. During the period of six months from 1st November to 30th April permission must be obtained from the Commissioner of Crown Lands before lighting any fires within a defined area of peat land, and before permission is granted reasonable precautions must be taken to control the fire. A large number of fire permits have been issued during the past three years, and it is a significant fact that there has not been one instance where an authorized fire has got beyond control. The fire regulations are for the protection of the settlers, and, under control and regulation, the fire-menace has to some extent been reduced. If these factors are given the consideration they deserve there will be more effective co-operation between the settlers and officers of the Department, and the loss and labour caused by fires will certainly be reduced.

Relief-of-unemployment measures have been one of the predominating influences in directing the construction activities on Hauraki Plains for some years past. Eight camps have been maintained throughout this year for the accommodation of workers drawn principally from the ranks of the city unemployed. Because of the seasonal character of some of the work, and other causes, the numbers employed has varied between 171 in October and 230 in February. The average number employed during the year was 190. These figures include all the men engaged on constructional and development works, but do not include the workers engaged on seasonal maintenance operations.

The works now being carried out are of the type suited to hand-labour methods, and comprise drain construction and improvements, road-formation, ringbarking willows, eradication of noxious weeds, and the development of Crown land for future settlement.

It can be claimed with confidence that, owing to the truly constructive type of activity, the expenditure from Unemployment Board and other funds on these works is in the nature of a subsidy for widely distributed benefits to the workers, present and future settlers, and to the community as a whole. Pre-settlement development works alone offer wide scope for the useful employment of additional labour in this district and will do much to avoid the delay and hardship of pioneering new settlement in reclaimed swamp land. More effective work could be carried out if the uncertainty regarding the supply of labour could be removed. In the past the number of men in the works camps has frequently been 50 per cent. below strength, and in one case a camp for twenty-five men had to be closed without completing the work for which it had been established because the employment agencies were unable to send men. Under these conditions working plans for balanced development are difficult to carry out. I feel confident that this difficulty would be overcome if the reproductive value of the works now being carried out on the Hauraki Plains was fully realized. This is unemployment-relief work that is an aid to reconstruction.

DREDGES.

Limited funds and restrictions in the use of mechanical equipment in favour of hand labour have been responsible for the small volume of construction carried out by the dredges and excavating-plant. The total quantity of machine-excavated material was 52,517 cubic yards for the year.

The following table gives the total quantities excavated by the dredges each year during the past fifteen years:—

Year.	Cubic Yards.	Cost per Cubic Yard.
1920-21	158,865	7.42d.
1921-22	246,022	7.29d.
1922-23	440,092	8.20d.
1923-24	508,654	7.27d.
1924-25	822,286	5.86d.
1925-26	856,653	6.32d.
1926-27	647,182	7.42d.
1927-28	652,413	7.32d.
1928-29	619,911	6.54d.
1929-30	595,565	6.25d.
1930-31	536,692	8.32d.
1931-32	390,611	7.99d.
1932-33	200,954	8.00d.
1933-34	116,224	5.96d.
1934-35	52,517	10.02d.

During June, July, and August, 1934, the whole of the excavating-plant was idle with the exception of No. 16 Bucyrus excavator, which was in use as a crane on the Kerepeehi Block pumping-station building.

No. 1 Priestman dredge and No. 11 Kingston dredge have been laid up at Kerepeehi since July, 1932, and No. 2 Priestman dredge has been laid up at Waitakaruru since May, 1931.

No. 15 Bucyrus excavator was idle from July, 1932, until December, 1934, when it was transported by barge from Kaihere Landing to the Kerepeehi Block pumping-station, where it has been used intermittently as a building crane, excavator, and pile-driver.

No. 16 Bucyrus excavator was employed on similar work for eight months from April to November, 1934, when it was shipped to the Waikaka Canal in the Patetonga district, and during the last four months of the year the machine has been employed widening and deepening this canal. Operating with half-yard Page bucket and 50 ft. boom, this machine excavated 20,605 cubic yards from 80 chains of canal in eighty-six working-days. The average daily output was 240 cubic yards, and the unit cost 6.85d.

No. 19 dredge, after being laid up since July, 1932, was reconditioned in August, 1934. This machine was reconstructed on the works in 1929 and equipped with a 100 ft. boom and superstructure of Oregon, specially designed to carry out the river-channel improvement between the 6 mile peg and Kerepeehi Wharf (11 miles 10 chains) and between the 13 miles 5 chains peg and Kaihere Wharf (14 miles 45 chains). In these two reaches the required top width of the improved channel is 170 ft., the under-water bank slopes three horizontal to one vertical, and the berm width between the improved channel and river-side toe of the spoil bank not less than 50 ft. To meet these conditions a bank-delivery machine having a reach of 200 ft. was required, and this plant was designed for this duty. The enforced laying-up of this machine, for reasons of economy, for a period of over two years, when about ten months continued operation would have completed the work for which it was built was particularly unfortunate, because, owing to decay of the timber superstructure, extensive renewals were required before the plant could be recommissioned. After working five months it was found necessary to lay up the machine to renew a section of the boom, and no work was done during March. Using a Page bucket of 1 cubic-yard capacity the output

for 119 working days was 26,392 cubic yards. The average daily output was 222 cubic yards, and the unit cost, including cost of extensive renewals, was 13·05d. Twenty-two chains of river-channel enlargement were completed from 13 miles 15 chains to 13 miles 37 chains.

No. 23 steam dipper dredge worked only eighteen days in May, 1934, cleaning up a section of the Elstow Canal and removing a temporary dam used to control the water-level during dredging-operations. After a lapse of a period of time to allow the peat land through which the Elstow Canal is excavated to consolidate, the canal will again be deepened, and in the meantime the plant is laid up. While working, the dredge traversed 70 chains of canal and removed 5,520 cubic yards of material at a cost of 7·37d. per cubic yard.

No. 24 steam dipper dredge was, at the beginning of the year covered by this report, moored in the Maukoro Canal at Waitakaruru, having completed the Pouarua Canal in March, 1934. In May the dredge was towed across the Hauraki Gulf and up the Piako River to Kerepeehi, where it is now laid up. The passage down the Maukoro Canal necessitated the removal and replacement of the middle span of the main highway bridge over the canal.

Details of the principal works carried out during the year in the several districts are given below:—

KEREPEEHI-AWAITI DISTRICT.

Activities in the Kerepeehi district have been centred principally on the drainage and development of the Kerepeehi Block, an area of 4,700 acres of Crown land lying between the Awaiti Canal and Piako River. The northern portion of this block, comprising 2,300 acres, is subdivided into thirty-five sections, all of which have been occupied for a period of five years or more, and are now productive farms. There is some peat on portion of this area, and when this disappears the surface-level of the land will be generally about high-spring-tide level. Permanent stop-banks along the Piako River and Awaiti Canal and a temporary stop-bank along the Reservoir Canal, forming the southern boundary of this area, protect it from flood overflow and a gravity-drainage system discharges through flood-gates into the Piako River. The middle portion of the block, comprising 1,700 acres, will, when the shallow-surface peat now covering portion of the area disappears, have a surface-level of approximately high-spring-tide level.

Permanent flood-protection is provided by the continuation of the stop-banks along the Awaiti Canal and Piako River, and by another stop-bank along the southern boundary connecting the canal and river stop-banks. When these banks are completed the middle and northern area will be surrounded by one stop-bank system, and the temporary stop-bank at present dividing them will not be required. The middle area has an independent gravity-drainage system discharging into the Awaiti Canal through flood-gates in the foundations of the drainage-pumping station now being erected on the outlet of the Reservoir Canal. The southern area of 700 acres lies inside the Awaiti Canal stop-bank, but is not surrounded by stop-banks because the present level of the peat between the Awaiti Canal and Piako River protects the land from river-overflow. As future subsidence of the peat may possibly cause flooding of this portion of the block it is separated from the permanently protected area by an inland stop-bank. It has an independent gravity-drainage system which will normally discharge through flood-gates into the Awaiti Canal, but can be connected with the drainage pump through the middle-area drainage system by means of sluice-gates. Allowing for subsidence of the peat, the final level of the southern area will vary between high-spring-tide level and 3 ft. below high-spring-tide level. During floods the water-level of the canal and river may be above ground-level for several days, and, to provide drainage at high stages of the river, a large drainage pump is being installed at the junction of the Awaiti and Reservoir Canals. The pumping-station will serve the whole of the Kerepeehi Block of 4,700 acres, and possibly an additional area of 1,000 acres.

As the middle and southern areas of the Kerepeehi Block will require more pumping than the northern area, the latter can be disconnected from the pumping-station by sluice-gates and the amount of pumping reduced to a minimum.

The pump now being installed is a 33 in. Tangye centrifugal pump capable of discharging 31,500 gallons per minute against a 4 ft. static head. This discharge is equivalent to a run-off of half an inch in twenty-four hours from the permanently protected area of 4,000 acres. The pump will be operated by a 90 h.p. electric motor, and a 3 h.p. motor is provided for operating an air-exhauster for priming. The plant is housed in a steel-frame building erected on substantial concrete foundations. As the ground at the site of the pumping-station is soft alluvial deposit, extending to a considerable depth, and having little bearing value and resistance to hydrostatic pressure, extra precautions were necessary to ensure watertight and stable foundations. For economy, the foundations of a road bridge and two large flood-gate culverts are incorporated in the pump-house foundations, and provision is made in the pump-house foundations for the future installation of another pump. The foundation slab is supported on 230 piles, driven 40 ft., and two 45 ft. cut-offs of tongue-and-groove timber sheet piling, 20 ft. long, are driven under the outer edge of the intake and outlet aprons. Four hundred and ninety cubic yards of concrete were required for the pump-house foundations, bridge, and culverts, and at the end of March, 1935, the concreting had been completed and the erection of the pump-house building and installation of the machinery were proceeding.

In March, 1934, a camp was established on the Kerepeehi Block to accommodate twenty-five men to be employed on drainage and clearing of the middle portion of the Kerepeehi Block in preparation for settlement. As the camp has been considerably below strength for

most of the year, progress of the work has been below expectations. Three hundred and thirty-four chains of drains were cleaned, 9,259 cubic yards of material excavated in improving 733 chains of existing drains, and 13,784 cubic yards excavated in the construction of 669 chains of new drains. Valuable work in checking the spread of ragwort was accomplished by treating the plants scattered over a large area with sodium chlorate, and an area of six acres was cleared of rushes. Another working-party of twelve to twenty-one men is camped on the Kerepechi Block, at the Kaihere Landing, and engaged on clearing Crown land (principally flax-plantations) of blackberry. The metalled roads on the Kerepechi Block have been maintained, and 436 cubic yards of surfacing metal was used for resurfacing 194 chains of the Awaiti Canal Road and Makumaku Road. Forty-two chains of Findlays Road was reformed and surfaced with 418 cubic yards of metal. The metalling of Wani's Road was commenced in April, and, after 50 chains had been reformed and surfaced with base-course metal, work had to be discontinued owing to wet weather until November. The total length of Wani's Road to be metalled is 5 miles 38 chains and the metalling of 18 chains of Pukahu Road is also included in the scheme, but owing to limited funds the work has to be spread over a period of three years. To give immediate metalled road access to the greatest possible number of settlers only the base-course is being laid at present. Base-course metal was laid on 280 chains of this road after reforming, and the surface-course was laid for a distance of 25 chains. The total quantity of metal spread was 3,046 cubic yards. In January the formation of a section of three miles of the Netherton-Tirohia Road was commenced. Co-operative-contract parties camped on the job cleared and stumped 197 chains of roadway, excavated 3,651 cubic yards of material in the construction of 128 chains of drains, and installed seven culverts. Road-formation was completed for a distance of 60 chains. The total length of the main drains cleaned in the Kerepechi-Awaiti district was 27 miles 65 chains, and in the Orongo Settlement 4 miles 26 chains. A small staff has been employed in the Kerepechi Workshops and Depot, where all stores and materials are received and despatched. The steel frame for the Kerepechi Block pump-house was fabricated in the Kerepechi Workshops, and practically all repairs to machinery and plant has been carried out by the workshop staff.

WAITAKARURU-TOREHAPE DISTRICT.

Working from a camp in the Waitakaruru Township, a gang of twenty-one to forty-one men have been employed enlarging the channel of the Waitakaruru Stream and raising the stop-banks. From 50 chains of canal 14,955 cubic yards of material was excavated and placed with barrows in the stop-banks. The stop-banks on the Kairito Canal were also raised for a distance of 1 mile 25 chains, and in this work 8,400 cubic yards of material were placed by hand-labour. Two hundred and three chains of fencing was erected to protect the Kairito Canal banks. Emergency repairs to roads and stop-banks caused by local floods were carried out. The improvement of the Waitakaruru Stream by manual labour is progressing slowly owing to difficulty experienced by the employment agencies in supplying labour. Plans were made for employing at least fifty men on this work, but for many months the number of men employed has been below thirty.

Another work-camp equipped for twenty-five men to be employed on drainage and land-development work is situated on the Maukoro Canal, three miles from the Waitakaruru Township. At the end of the year twenty-three men were in this camp, but during 1934 the number varied between seven and eleven. In the Waitakaruru district 14 miles 67 chains of drains were cleaned, 6,504 cubic yards of spoil was excavated for the improvement of 205 chains of drains, and 490 cubic yards in the construction of 5 chains of new drain.

In September, 1933, a camp for twenty men was established near the junction of the Orchard-West and Waitakaruru-Torehape Roads for drainage and land-development work. In May, 1934, as there were only three men in this camp, it was closed, when an access bridge and 255 chains of fencing had been completed on two small farms at Mangatarata.

Fifteen to twenty-six men accommodated in hutments at Torehape have been engaged throughout the year on drainage and road-construction. Four hundred and two chains of drains were cleaned and 30 chains of drain improved by the removal of 100 cubic yards of material. Clay from a pit at Torehape is being transported by light railway for ballasting peat-roads. 11,044 cubic yards of clay ballast were hauled by petrol-locomotives an average distance of about three miles. The maximum haul was $5\frac{3}{4}$ miles. 1,600 fascines were cut and laid along 20 chains of roadway and 20 chains of light railway were laid and 3,159 willow-sleepers cut on the banks of the Piako River. Grass-seed was sown on 180 acres of burnt peat swamp.

PATETONGA-TAHUNA DISTRICT.

On the completion of the metalling of the Patetonga Top Road in March, 1934, the men from the roadwork camp established at Patetonga in October, 1932, were employed resurfacing Otani Street, Patetonga Township, for a distance of 65 chains with 217 cubic yards of metal quarried and hand-broken. The metalling of O'Dwyer's Road was commenced, but in May the work was stopped for the winter and the camp closed, the men being transferred to the Kerepechi Block Camp. The metalling of 60 chains of O'Dwyer's Road was completed in December by men from another camp at Patetonga. Three hundred and sixteen cubic yards of metal was quarried and hand-broken for this road.

A working-party of five to twenty-one men has been engaged on drainage-work in this district. 3,479 cubic yards of spoil were excavated in widening and deepening 106 chains of drain. 33 miles 69 chains of drains were cleaned.

In January a camp for twenty men was established at Tahuna. Employed on a co-operative-contract basis, these men ring-barked the willows on the Piako River between the junction of the Waitoa River and the Tahuna Bridge, a distance of 7 miles 25 chains. The camp was then moved to Springdale and the willows on the Waitoa River ring-barked for a distance of 6 miles 40 chains upstream from the Piako Junction, and a smaller working-party of ten men accommodated on house-boats ring-barked the willows on the Piako River 2 miles 55 chains down-stream from the Waitoa River Junction, and cleared the channel of fallen willows for a distance of 3 miles 25 chains (19 miles 15 chains to 22 miles 40 chains).

SURVEYS AND OFFICE WORK.

Engineering surveys carried out during the year comprised 1,767 chains of traverse and 1,189 chains of levelling. Land surveys of fourteen rural sections, five township sections, and two roads were also carried out. River-stage records and discharge-measurements were obtained as required for flood-control investigations. Plans of the pumping-station were prepared in the Kerepehi office. A considerable amount of routine work is involved in the periodical measurement of the work carried out by the dredges and contractors, the fortnightly wages and contract payments to 150 to 200 men scattered over a large area, the monthly payments to standard workers and contractors, and the management of the camp mess accounts.

SUMMARY.

The total length of subsidiary drains constructed in connection with the Hauraki Plains works to date is 767 miles 64 chains. The principal works carried out during the year are shown in the following tabular statement:—

	Length. M. ch.	Excavation. Cub. Yd.
Drains cleaned by manual labour	85 57	..
Drains widened and deepened by manual labour	13 34	19,342
Drains, new construction, by manual labour	10 2	17,925
Stop-banks raised by manual labour	1 25	8,400
Channel enlarged and stop-banks raised, manual labour	0 50	14,955
Total excavation by manual labour		60,622
River-channels and canals deepened with dredges	2 12	52,517
		Metal.
Roads reformed and metalled	1 47	1,184
Roads reformed and metalled, base-course only	3 15	2,596
Metalled roads resurfaced	3 19	653
Total metal spread		4,433
		Ballast.
New roads formed	0 60	..
Clay ballast delivered on peat road by light railway .. ..	..	11,044
3-ft.-gauge tramway laid	0 20	..
Willows ring-barked on river-channel	16 40	..
River-channel cleared of fallen willows	3 25	..
Fences erected	2 43	..
		Acres.
Area sown in grass .. ..	..	200
Area cleared of blackberry and gorse .. ..	..	80
		Number.
Fascines used for road-construction .. ..	..	1,600
Sleepers used for road-construction .. ..	..	3,159

WORKS EXPENDITURE.

Expenditure totalled £20,615 6s. 6d. Drainage rates struck totalled £1,534 12s. 7d., and £1,340 9s. 9d. was collected.

I have, &c.,

R. G. MACMORRAN, Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

HAURAKI PLAINS SETTLEMENT SCHEME.

RATE ACCOUNT AS AT 31ST MARCH, 1935.

<i>Dr.</i>		£	s.	d.	<i>Cr.</i>		£	s.	d.
To Maintenance of completed works	.. ..	1,194	0	3	By Balance brought forward	.. ..	1,858	3	2
Remission of rates	.. ..	112	8	1	Rates levied	.. ..	1,534	12	7
Balance	.. ..	2,154	3	6	Penalty, 10 per cent.	.. ..	67	16	1
		<u>£3,460</u>	<u>11</u>	<u>10</u>			<u>£3,460</u>	<u>11</u>	<u>10</u>

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1935.

<i>Receipts.</i>					<i>Payments.</i>																			
					Public Works Fund.					Consolidated Fund.														
					£		s.		d.		£		s.		d.									
To Rates	..	..	..	..	..	..	1,198	10	1	By Drainage-works: Stop - banks, clearing channels, and other expenditure incidental to conducting drainage operations (including formation and metalling of roads), materials supplied, &c.	..	..	12,681	17	8	..	
Law-costs	..	..	..	..	..	..	2	13	11	Material and stores	..	..	5,347	3	1	..	
Sale of land	..	..	..	..	2,130	19	11	..	..	Fuel	..	..	1,108	6	6	..	
Rents and grazing-fees	..	..	..	..	..	..	8,017	0	9	Maintenance of completed works	..	..	..	..	1,081	15	6
Interest on sales of land	..	..	..	..	..	..	578	6	7	Management and engineering expenses	..	..	1,438	17	7	..	
Artesian-well boring—										Refund rent	..	..	..	..	64	12	10			
Repayment of advances	4	0	0	Discharged Soldiers Settlement Account: Recoupment in respect of merged transactions	3	18	8	21	2	8						
Interest on advances	..	..	..	..	..	..	11	13	0	Kaihere Ferry expenses	..	..	..	..	195	4	5
Instalments on buildings	..	..	..	..	..	..	17	19	4	Refund rates	..	..	..	..	1	18	7
Ferry fares	..	..	..	..	..	..	208	13	0	Transfer receipts to Treasury Adjustment Account	..	..	..	..	10,120	4	7
Credits in reduction of expenditure	9,189	15	7	..	..	..	169	2	0	Transfer receipts to Public Works Fund	..	..	..	11,316	16	10	..	
Transfer expenditure to Treasury	..	..	..	..	..	..	1,276	19	11									
Adjustment Account	..	..	..	..	..	..	..	..	..						
Transfer expenditure to Public Works Fund	..	..	..	..	20,576	4	10	..	..													
					<hr/>					<hr/>					<hr/>									
					£31,897 0 4					£11,484 18 7					£31,897 0 4					£11,484 18 7				

REVENUE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1935.

<i>Dr.</i>		£	s.	d.	<i>Cr.</i>		£	s.	d.
To Interest on Public Works Fund capital	.. ..	35,598	4	11	By Accrued rents	.. ..	9,837	12	6
Kaihere Ferry expenses	.. ..	194	11	9	Interest on sales of land	.. ..	817	11	4
Kaihere Ferry: Half profit to County Council	.. ..	4	9	4	Grazing-fees	.. ..	110	9	11
Administration expenses	.. ..	380	3	4	Ferry fares	.. ..	203	10	6
Remissions of rent	.. ..	738	13	5	Hire of plant	.. ..	188	5	9
Remissions of interest	.. ..	60	10	4	Forfeited deposits	.. ..	7	10	0
Rebates	.. ..	621	9	0	Net loss carried down	.. ..	26,510	19	11
Irrecoverable rents, &c.	.. ..	63	7	10					
Premiums on conversion	.. ..	14	10	0					
		<u>£37,675</u>	<u>19</u>	<u>11</u>			<u>£37,675</u>	<u>19</u>	<u>11</u>
		£	s.	d.			£	s.	d.
To Net loss brought down	.. ..	26,510	19	11	By Balance carried forward	.. ..	228,801	9	6
Balance from previous year	.. ..	202,290	9	7					
		<u>£228,801</u>	<u>9</u>	<u>6</u>			<u>£228,801</u>	<u>9</u>	<u>6</u>

