

1907.
NEW ZEALAND.

STATE COAL-MINES

(REPORT ON THE WORKING OF) FOR THE YEAR ENDING 31st MARCH, 1907.

Presented to both Houses of the General Assembly in accordance with the requirements of Section 108 of "The Coal-mines Act, 1905."

W. C. GASQUOINE, Esq., Manager, State Coal-mines Department, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— State Coal-mines Department, Wellington, 8th July, 1907.

I have the honour to submit the annual report on the transactions of this Department for the period ended the 31st March last.

The aggregate quantity of coal dealt with was 196,509 tons 2 cwt., valued at £158,097 6s. 4d. Figured separately, Point Elizabeth Colliery supplied to:—

	Tons	cwt.	qr.	Value. £ s. d.
Railways	91,502	4	1	89,344 19 3
Private consumers (including shipping companies)	67,530	15	2	40,348 3 7
Government Departments other than Railways	4,445	3	3	3,832 15 3
Totals	163,478	3	2	133,525 18 1

Of this quantity 4,236 tons 17 cwt. 3 qr., value £3,870 10s. 5d., was disposed of through the medium of the hulks.

The excellent quality of this coal is now being realised, and it is much sought after not only for household purposes—for which it has few if any equals—but also as a steam-producer. With some slight alterations in furnaces the small coal has been found to give general satisfaction, and one of its greatest advantages is that it does not burn the firebars.

The demand at present far exceeds the supply, but patience has to be exercised, as the development of such a large field has to be gradually and carefully carried out.

The Seddonville Colliery supplied to:—

	Tons	cwt.	qr.	Value. £ s. d.
Railways	15,706	3	1	14,007 6 10
Private consumers (including shipping companies)	16,611	9	2	10,129 2 11
Government Departments other than Railways	713	5	3	434 18 6
Totals	33,030	18	2	24,571 8 3

Of this quantity 718 tons 6 cwt. 1 qr., value £677 1s. 7d., was disposed of through the medium of the hulks.

1—C. 3B.

A good deal of what is termed "soft coal" exists in this mine, but first-class hard coal is also obtainable. Owing, however, to the preponderance of slack—for which there is practically no market—it was considered injudicious to actively push on matters until such time as the briquette-works in course of construction were completed, consequently sales were limited. The works have now been finished, and are capable of turning out about 150 tons of briquettes and eggettes daily. If these are found to be a good marketable article, and the mine-manager's anticipation as to a run of good hard coal is realised, it augurs a much brighter future for the Seddonville Colliery.

During the year depots for the sale and distribution of State coal were opened at Wellington and Christchurch. These having fulfilled the purpose for which they were initiated, another has recently been opened at Wanganui. It might be as well, however, to state that it will be advisable to exercise caution in opening new depots: population is the chief factor in the success of such undertakings, and it may be necessary to find some other means of distributing our coal in the smaller districts.

I have, &c.,

W. C. GASQUOINE,
Manager State Coal-mines Department.

Mr. JAMES BISHOP, Manager of State Coal-mines, to the UNDER-SECRETARY FOR MINES,
Wellington.

SIR,—

Greymouth, 3rd July, 1907.

I have the honour to submit my annual report on the State coal-mines for the year ending 31st March last.

POINT ELIZABETH COLLIERY.

Underground Developments.

The underground workings of the colliery are divided into three sections, and the principal operations for the year have been confined to sections 1 and 2. In No. 1 section the main dip heading has reached a distance of 25 chains from the starting-point at upper level, and in No. 2 the distance of main heading from the level is 45 chains.

The continuation of the dip headings has proved the inclination of the seam to be fairly uniform, the average dip being at the rate of one in five. The thickness of seam is approximately 10 ft. throughout, and the quality continues satisfactory. The water, which was expected to increase as the headings were extended, has not done so to any appreciable extent, and is easily dealt with by the pumps working one shift daily.

Coal-winning.

No. 1 section produced 98,001 tons 16 cwt. during the year, and No. 2 75,880 tons 16 cwt. making a gross total of 173,882 tons 12 cwt., from which has to be deducted the quantity used at the works and small coal put to spoil during the period. Thus there was available for market 166,320 tons 18 cwt.—a substantial increase over the years 1905–6.

No. 3 section yielded no output during the year, as coal from this section cannot be profitably won and handled until a connection has been formed with No. 2 dip workings. This connection is being proceeded with, and when complete it is hoped that the output of the colliery will be considerably augmented from the workings to be opened in No. 3.

The accompanying plan shows the relationship of the several sections, and the direction in which the workings are being extended; and it may be explained that the necessity for the colliery being worked in separate sections is due to faults which traverse the field in the directions shown on plans.

Surface Works.

The whole of the buildings and machinery have been maintained in good and efficient repair, and new buildings have been erected during the year for (a) storage of mine-requisites, (b) lamp cleaners' and repairers' cabins, (c) shelter-shed for workmen waiting to go on shift, (d) engine and boiler houses for new plant.

The haulage-engines and air-compressor engines, mentioned in my last year's report, have been completely installed and substantially housed.

The hauling-engines cannot be fully utilised pending additional coal-tubs being provided, the construction of these is being pushed on with at the colliery workshops.

The air-compressing plant is in continuous use (three shifts daily); the 4 in. pipe-line laid for the conveyance of air underground is 5,500 ft. long. The air is being utilized for actuating pumps and hauling-engine in the No. 1 dip section. A similar installation is being got ready for the No. 2 section, and will be in operation at an early date.

The application of the compressor so far has proved to be both convenient and economical in working. The engines have worked well from the start.

The surface hauling plant, the screening plant, and coal-tipping appliances continue to work satisfactorily, and with the minimum of cost in manipulation and repairs.

The sawmill continues to be of great service, not only in connection with the supply of timber for colliery buildings and for underground use, but also for the preparation and supply of timber for the building of workmen's homes.

Exploration.

Exploratory work by boring from the surface has been carried on in both working-sections by diamond drill, and the results show that the seam now being worked extends far beyond the point reached by the most advanced headings so far driven, and also that the thickness of the seam is being fully maintained. In this connection there is one adverse feature—the bores in No. 1 area have proved that there is a downthrow fault coursing east and west. The displacement due to this fault is 150 ft. (see section). The existence of this trouble will necessitate the making of special arrangements for winning the coal from the dip side, but for this there is no immediate urgency.

The total boring done amounts to 965 ft., in two holes. The new diamond boring-machine recently imported, and capable of boring 1,500 ft., has been working most successfully on the above work. It was found necessary to make some alterations to the machine on arrival here, and these having been done the machine is working perfectly.

The surface outcrops have also received careful examination, more especially on that portion of the reserve lying to the north of the present colliery, and there extending over, approximately, 4,000 acres. Six seams of coal have been traced, ranging in thickness from 3 ft. to 21 ft. Several of these seams possess all the properties essential to first-class coal, and in many respects they are superior to the best coal at present produced within the colony.

Harbour and Shipping Facilities.

The frequent blockage of the Port of Greymouth, due to heavy seas rendering the bar unworkable, or to floods in the Grey River, still continues to be the principal hindrance to the progress of the coal-mining industry on this field.

It may also be noted that when the bar is workable and shipping abundant the facilities for berthing vessels and for the handling of cargo inward and outward appear inadequate for the work required to be done.

As serving to illustrate the effect on the output of coal, it may be mentioned that the possible working-days for 1906-7 were 282, which were reduced by thirty-three days owing to lack of shipping from causes above referred to. Thus 12·8 per cent. of the time was lost, and the output was reduced by at least 20,000 tons.

The general effect of such frequent interruption of work is to reduce the output, also the earnings of the workers, and increase the average cost of production.

Accidents.

Accidents of a minor character occurred during the year, and two of a somewhat serious nature, but no fatality.

The payments made under the provisions of the Workers' Compensation for Accidents Act—being at the rate of 50 per cent. of wages earned prior to the accident—amounted to £953 4s. 1d., being at the rate of 1·375d. per ton of coal sent to market, which is somewhat lower than is given under similar provisions applying to the coal-miners of the United Kingdom.

Employees.

There were employed during the year a total of 271 men and youths in connection with coal-winning, 140 being coal-hewers, 111 other classes of labour, and 20 youths. Average time made, 4·81 days per week; hewers' average daily earnings, 14s. 4·35d.

Future Developments.

The future developments of the present colliery, so far as the underground workings are concerned, will be mainly carried on towards the dip of the field where the coal maintains its full thickness; and in addition to the present seam there is another workable seam 200 ft. lower to be won by cross-measure drifts, and it may be found advantageous to sink a shaft on the dip as

the workings extend in that direction. This would facilitate the ventilation of the workings and the better handling of the output, which is rapidly increasing, and the demand points to a still more rapid increase being required in the near future, mainly for forced-draft ships and manufacturing purposes. To meet this demand the seams of coal lying undeveloped to the north should be opened up; from these a very large output can easily be maintained, and the requirements of all classes of trade could be met.

General.

In the conduct of the workings of the colliery and the several works connected therewith it has been the aim of the management to keep down costs of production and other expenditure to the lowest, consistent with safety and efficiency.

The necessity for the rapid driving of the winning-places to keep the ground opened up in advance of the general workings, and the frequent interruption of work to which the colliery is liable, have tended to keep cost of production higher than desirable.

The agreement in force for regulating the rates of pay and other matters affecting the workers employed is working well.

In conclusion, permit me to say that the officers in all departments have discharged their duties in a most satisfactory way, and the Consulting Engineer has rendered valuable assistance in connection with the rapidly extending works.

SEDDONVILLE COLLIERY.

Underground Developments.

During the past year the principal work connected with coal-winning has been carried on in the extension of the field south of Chasm Creek.

In this new development a tunnel was driven in a direct line with the main haulage-road for a distance of 15 chains, from which workings have been opened mainly in a south-westerly direction, and a connection has been effected with an additional new area known as Dove's Heading. This connection has been made in a tunnel about 12 chains in length, and then by surface tram for a distance of 10 chains. The main heading in this area was driven a distance of 6 chains in good coal, when progress was interrupted by what appears to be an intrusion of granite, a very common form of trouble in this field.

The workings opened in the area just referred to give room for eighteen coal-hewers, the majority of places producing coal of excellent quality.

Some coal has also been won from the areas on the north side of Chasm Creek. The number of places in solid coal are limited. There are, however, considerable areas standing in pillars.

Coal raised.

The coal raised during the year amounted to 43,287 tons, from which has to be deducted the mine-consumption and waste, leaving available for market 32,970 tons.

The number of men employed during the year averaged ninety-two. The time worked per fortnight averaged 8 days 1 hour, and the coal-hewers' earnings averaged 14s. 1'23d.

There were no accidents of a serious character during the year.

Exploration.

With the object of testing the field in advance of the workings on the south side of Chasm Creek, several bores have been put down, the approximate position of which is shown on accompanying plan. Nos. 1, 2, and 3 are in a direct line with Dove's tunnel. No. 1 proved 7 ft. 6 in. of coal at a depth of 61 ft.; No. 2, 7 chains in advance of No. 1, failed to find coal, struck granite formation at 65 ft.; and No. 3, 13 chains in advance of No. 1, struck granite at 26 ft. Nos. 4 and 5 are on the line of main haulage-road. The former proved granite at a depth of 155 ft., no coal. No. 5 is in course of boring, as also is No. 6. The latter is midway between the line of the two tunnels. Taking the result of the boring so far as it has gone proves that the conditions on the south side of Chasm Creek are no improvement on those previously experienced on the north, and that the field continues to maintain the unsatisfactory characteristic of small areas of coal in the form of irregularly shaped basins detached from each other by granite.

The centres of the basins usually yield coal of good quality and thickness, but thinning towards the edges. It is this want of continuity in the field which has prevented proper and systematic development of the colliery, and, as indicated, recent explorations do not encourage the hope of any satisfactory change in the conditions of the field being met with.

Future Developments.

There is little to be said under this head, excepting that it will be incumbent upon the management to make careful examination of all surface indications, and thoroughly test the ground by bores prior to the more expensive operation of driving tunnels.

Utilisation of Small Coal.

One great drawback hitherto experienced in connection with this colliery has been the difficulty of finding a profitable market for the amount of small coal produced. The production of screened coal, for which there has always been ready sale, leaves about 50 per cent. of small to be disposed of. This, after rescreening for nuts—which also command a fair market—leaves practically 25 per cent. unmarketable small. Thus the cost of production is abnormally increased, and the chance of profitable working correspondingly lessened.

Now that the briquette plant, erected at Westport specially to treat this small and crushed coal, has been completed, it is to be hoped the waste will cease, and coal hitherto unsaleable find a market in the form of briquettes, the value of which for household use, locomotive-firing, and steam-raising generally cannot be doubted.

Assuming increased demand due to the briquette-works, there is abundance of the coal required at present standing in pillars which should be mined very cheaply. In any case, there should be an abundance of the cheaper class of small to keep the briquette-works fully employed, and the lump coal and nuts should be marketable at higher prices than those now current.

Surface Works.

The machinery, haulage-ropes, and works generally have been maintained in good order during the year.

In closing this report I would again call attention to the need for special care being exercised in connection with the prospecting of the field to avoid unnecessary expenditure, and at the same time secure the best possible results; and if the colliery is to be made commercially successful improved prices must be secured.

I have, &c.,

JAMES BISHOP, Manager.

The Under-Secretary, Mines Department, Wellington.

BALANCE-SHEET OF THE NEW ZEALAND STATE COAL-MINES.

Statement of Liabilities and Assets at 31st March, 1907.

Liabilities.		£	s.	d.	£	s.	d.	£	s.	d.
Debenture loan	..	..	..	140,000	0	0				
Sundry creditors	..	..	14,479	14	9					
Accrued interest	..	..	2,450	0	0					
Debenture Sinking Fund	..	..	5,600	0	0					
	..	..			22,529	14	9			
General Profit and Loss Account—										
Balance of profit at 31st March, 1906	..	..	25,007	15	1					
Net profits for the year ended 31st March, 1907	..	..	8,460	19	1					
	..	..			33,468	14	2			
Assets.										
Point Elizabeth Colliery and Development Property Account—										
Cost at 31st March, 1906	..	..			15,910	5	10			
Additional outlay during the year	..	..			2,983	2	11			
	..	..			18,243	8	9			
Depreciation, 10 per cent.	..	..			1,824	6	10			16,419 1 11
Machinery, plant, ropes, and rolling-stock—										
Cost at 31st March, 1906	..	..			18,640	9	0			
Additional outlay during the year	..	..			13,058	1	3			
	..	..			30,698	10	3			
Depreciation, 10 per cent.	..	..			3,069	17	0			27,628 13 3
Buildings at mine—										
Cost at 31st March, 1906	..	..			1,779	15	2			
Additional outlay during the year	..	..			664	13	10			
	..	..			2,444	9	0			
Depreciation, 10 per cent.	..	..			244	8	11			2,200 0 1
Cottages—										
Cost at 31st March, 1906	..	..			243	0	0			
Depreciation, 10 per cent.	..	..			24	6	0			218 14 0
Stores (stock on hand) ..					3,066	0	7			
Timber (stock on hand) ..	..	..			176	6	3			
Coal (stock on hand, mine and wharf) ..	..	..			£1,225	2	1			
Coal (stock on hand, afloat) ..	..	..			461	11	11			
	..	..			1,686	14	0			4,929 0 10
	..	..								51,395 10 1
Seddonville Colliery and Development Property Account—										
Cost at 31st March, 1906	..	..			12,620	13	2			
Additional outlay during the year	..	..			1,207	13	10			
	..	..			13,828	7	0			
Depreciation, 10 per cent.	..	..			1,382	16	8			12,445 10 4
Machinery, plant, ropes, and rolling-stock—										
Cost at 31st March, 1906	..	..			13,557	2	6			
Additional outlay during the year	..	..			1,085	11	6			
	..	..			14,642	14	0			
Depreciation, 10 per cent.	..	..			1,464	5	5			13,178 8 7

Statement of General Profit and Loss Account for the Year ended 31st March, 1907.

C.—3B.

<i>Dr.</i>		<i>Cr.</i>	
	£ s. d.		£ s. d.
To Point Elizabeth Colliery—		By Point Elizabeth Colliery Working Account: Gross profit	90,025 6 0
Management and office salaries	1,971 1 1	Seddonville Colliery Working Account: Gross profit	12,612 18 1
Rents	145 3 1	Wellington Depot Trading Account: Gross profit	5,153 18 1
Interest and exchange	2,603 8 0	Christchurch Depot Trading Account: Gross profit	2,436 11 10
Travelling expenses	272 15 11		7 15 7
Printing and stationery	98 0 4		
Telegrams and postages	212 12 3		
Repairs and maintenance	673 15 0		
Railway haulage ..	14,464 8 10		
Insurance	23 0 0		
Marine insurance ..	144 18 11		
Compensation for accidents and fund	1,297 11 1		
General expenses ..	136 7 0		
Marine freights ..	43,083 19 0		
Hulks Working Account	1,416 0 2		
Charges (Wellington)	787 19 7		
Bad debts	36 4 6		
Depreciation: mine, buildings, plant, and machinery	5,162 18 9		
	72,530 3 5		
Seddonville Colliery—			
Management and office salaries	710 15 6		
Rents	59 1 5		
Interest and exchange	2,050 12 7		
Travelling expenses	98 3 8		
Printing and stationery	38 15 1		
Telegrams and postages	90 2 3		
Repairs and maintenance	96 13 3		
Railway haulage ..	4,840 19 2		
Insurance	7 0 0		
Marine insurance	30 7 2		
Compensation for accidents and fund	215 1 6		
General expenses ..	104 19 6		
Marine freights ..	7,168 7 2		
Hulks Working Account	239 19 1		
Charges (Wellington)	255 2 4		
Bad debts	187 9 1		
Depreciation: mine, buildings, plant, and machinery	2,924 1 1		
	19,112 9 11		
Wellington Depot—			
Wages	2,080 0 1		
Salaries	884 0 0		
Rent	447 4 6		
Rates	52 10 10		
Interest and exchange	43 15 11		
Advertising ..	103 11 6		
Repairs and maintenance	164 8 5		
Telegrams and postages	14 17 0		
Printing and stationery	56 0 5		
Insurances ..	18 11 3		
Travelling expenses	40 16 10		

Statement of Seddonville Colliery Profit and Loss Account for the Year ended 31st March 1907.

<i>Dr.</i>	£	s.	d.	<i>Cr.</i>	£	s.	d.
To Management and office salaries ..	710	15	6	By Balance of Working Account: Gross profit at mine ..	12,612	18	1
Reuts ..	59	1	5	Balance: Loss ..	6,499	11	10
Interest and exchange ..	2,050	12	7				
Travelling expenses ..	93	3	8				
Printing and stationery ..	38	15	1				
Telegrams and postages ..	90	2	3				
Repairs and maintenance ..	96	13	3				
Railway haulage ..	4,840	19	2				
Insurances ..	7	0	0				
Marine insurance ..	30	7	2				
Compensation for accidents and fund ..	215	1	6				
General expenses ..	104	19	6				
Marine freights ..	7,168	7	3				
Hulks Working Account ..	239	19	1				
Charges (Wellington) ..	255	2	4				
Bad debts ..	187	9	1				
Depreciation: mine, buildings, plant, and machinery ..	2,924	1	1				
	19,112	9	11				
	<u>£19,112</u>	<u>9</u>	<u>11</u>		<u>£19,112</u>	<u>9</u>	<u>11</u>

Wellington Depot Trading Account for the Year ended 31st March, 1907.

<i>Dr.</i>	£	s.	d.	<i>Cr.</i>	£	s.	d.
To Stock of coal taken over at 11th April, 1906 ..	386	18	6	By Sales of Coal ..	16,900	14	4
Firewood taken over ..	36	16	0	Sales of firewood, coke, and charcoal ..	703	6	7
Charcoal ..	28	4	0				
	451	18	6	Stocks on hand 31st March, 1907—			
Purchases, Point Elizabeth coal ..	8,686	12	3	Coal ..	993	0	6
Purchases, Seddonville coal ..	2,988	15	2	Firewood and charcoal ..	68	12	0
Purchases, firewood, coke, &c. ..	525	2	3				
	12,200	9	8				
Cartage to depot ..	859	7	2				
Balance, gross profits ..	5,153	18	1				
	<u>£18,665</u>	<u>13</u>	<u>5</u>		<u>£18,665</u>	<u>13</u>	<u>5</u>

Wellington Depot Profit and Loss Account for the Year ended 31st March, 1907.

C.—3B.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Wages	2,080	0	1	By Balance of Trading Account, gross profits	5,153	18	1
Salaries	884	0	0				
Rents	447	4	6				
Rates	52	10	10				
Interest and exchange	43	15	11				
Advertising	103	11	6				
Repairs and maintenance	164	8	5				
Telegrams and postage	14	17	0				
Printing and stationery	18	11	3				
Insurances	40	16	10				
Travelling-expenses	606	7	10				
Cartage Account	87	14	1				
Sacks	28	2	9				
Freight	148	4	11				
General expenses	50	0	0				
Loss of horse	4,826	6	4				
Net profit for the year	327	11	9				
					£5,153	18	1

Christchurch Depot Trading Account for the Nine Months ended 31st March, 1907.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Purchase Point Elizabeth coal	5,020	15	11	By Sales of coal	9,354	14	7
Purchase Seddonville coal	1,068	17	4	" firewood, coke, &c.	99	17	6
Purchases firewood, coke, &c.	79	8	10				
Haulage to depot	6,169	2	1	Stocks on hand, 31st March, 1907—			
Balance, gross profit	1,250	3	11	Coal	374	6	9
	2,436	11	10	Firewood, coke, &c.	26	19	0
					401	5	9
					£9,855	17	10

Christchurch Depot Profit and Loss Account for the Nine Months ended 31st March, 1907.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Wages	750	18	11	By Balance of Trading Account, gross profits	2,436	11	10
Salaries	482	2	6	Reuts	7	15	7
Interest and exchange	222	8	9	Balance, loss	50	18	1
Advertising	103	1	5				
Repairs and maintenance	7	18	6				
Telegrams and postage	8	13	5				
Printing and stationery	61	10	5				
Insurances	6	5	0				
Travelling-expenses	56	7	9				
Cartage	686	6	5				
Sacks	20	9	10				
General expenses	89	2	7				
	2,495	5	6				
					£2,495	5	6

Statement of the Receipts and Expenditure of the State Coal-mines Account for the Year ended 31st March, 1907.

Dr.				Receipts.				Cr.				Expenditure.				
To Cash in hand and in Public Account at 31st March, 1906				£	s.	d.	£	s.	d.	By Point Elizabeth Colliery—				£	s.	d.
Sales of coal, Point Elizabeth				135,515	1	4	103,110	1	3	Property and development ..				2,112	19	1
Sales of coal, Seddonville				25,699	0	6				Machinery, plant, and rolling-stock ..				10,808	16	7
Recoveries—Sales, timber, stores, &c.				2,888	11	7				Buildings ..				532	1	7
Refunds				10	7	9				Stores and materials ..				6,907	9	6
										Wages ..				42,064	2	7
										Timber ..				892	11	10
										Wharfage, &c. (Wellington)				801	6	11
										Seddonville Colliery—						
										Property and development ..				1,088	13	2
										Machinery, plant, and rolling-stock ..				1,126	0	3
										Stores and materials ..				5,429	11	0
										Wages ..				10,517	14	0
										Briquette plant ..				6,333	6	7
										Wharfage, &c. (Wellington)				292	1	11
										Hulks Working Account ..				1,428	14	9
										Christchurch depot, property working ..				2,209	18	10
										Wellington depot, property working ..				1,515	10	6
										Management and office salaries ..				877	18	0
										Rent ..				4,885	5	3
										Interest and exchange ..				154	17	0
										Marine freights ..				3,998	11	0
										Travelling-expenses ..				770	16	4
										Printing and stationery ..				4,927	19	9
										Telegrams and postages ..				51,668	14	11
										Repairs and maintenance ..				841	0	10
										Railway haulage ..				233	5	7
										Marine insurance ..				325	19	11
										Insurance ..				728	1	10
										Compensation for accidents and fund ..				20,825	17	2
										General expenses ..				209	9	11
										Wellington office furniture ..				45	0	0
										Rates ..				1,305	4	7
										Refunds ..				411	0	1
														50	1	0
														52	10	10
														3	0	4
										Cash in hand and in Public Account at 31st March, 1907				95,827	4	2
										Less vouchers passed outstanding ..				14,979	15	2

State Coal-mines Office, Wellington, 17th June, 1907.

LOUIS H. EILERS, Accountant.
P. HEYES, F.S.A.A. Eng., Inspecting Accountant.

Examined and found correct.

J. K. WARBURTON,
Controller and Auditor-General.

JAMES MCGOWAN,
Minister of Mines.

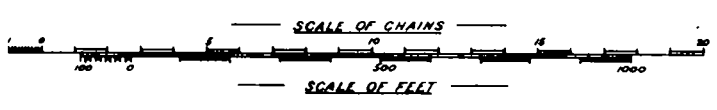
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NEW ZEALAND STATE COAL MINES.

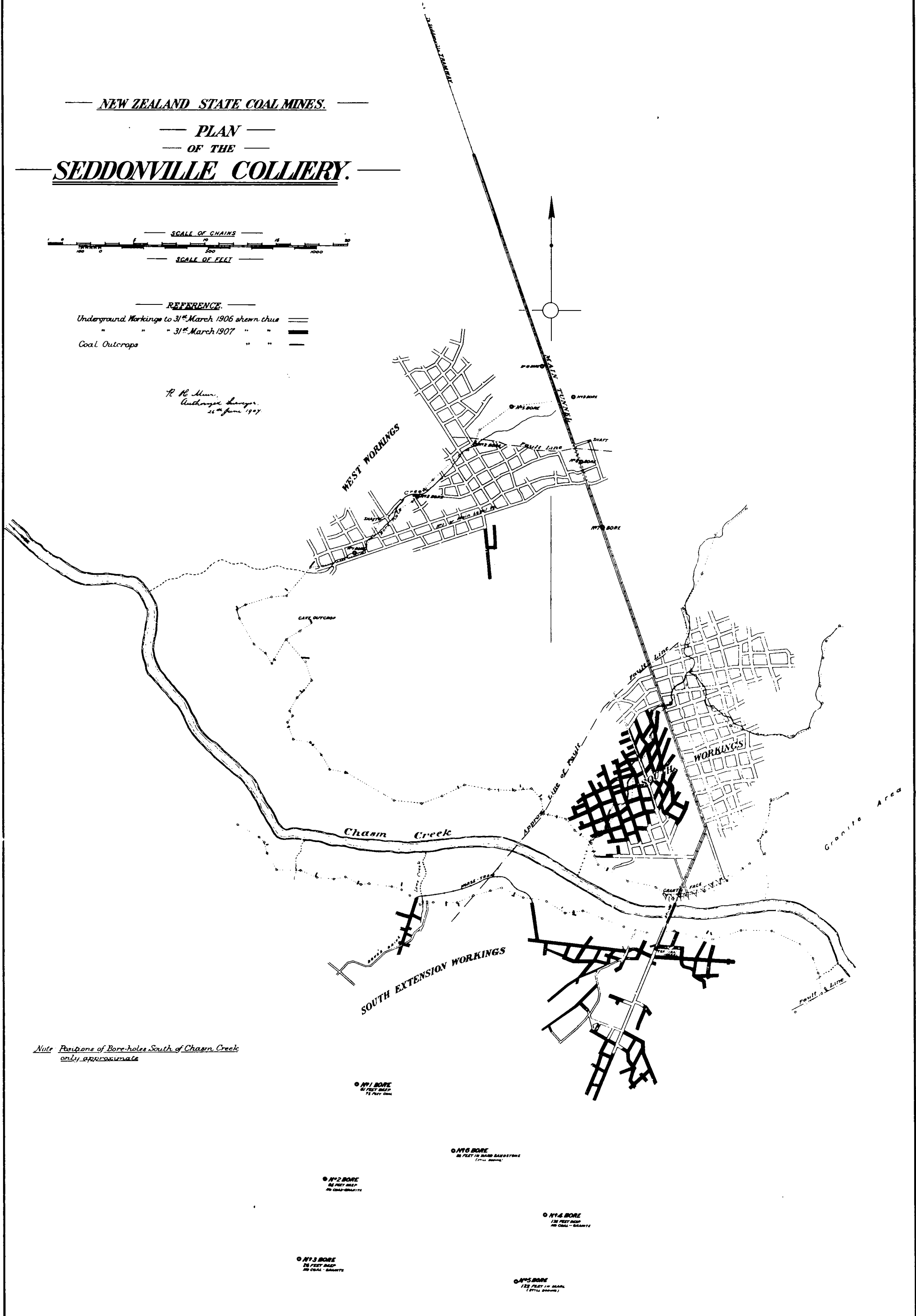
PLAN
OF THE

SEDDONVILLE COLLIERY.



REFERENCE.
Underground Markings to 31st March 1906 shown thus ———
" " " 31st March 1907 " " ———
Coal Outcrops " " ———

R. R. Munro
Author of Survey
26th June 1907



Note Positions of Bore-holes South of Chasm Creek
only approximate

— James Bishop M I M E. Manager —



