1908.

NEW ZEALAND.

INSPECTION OF COAL-MINES REPORT.

("THE COAL-MINES ACT, 1905.")

Presented to both Houses of the General Assembly by Command of His Excellency.

Mr. FRANK REED, M.Inst.M.E., Lic. Surveyor, Inspecting Engineer, to the UNDER-SECRETARY, Mines Department.

SIR,— Mines Department, Wellington, 4th April, 1908.

I have the honour to submit the annual reports of inspection, together with statistical information in regard to the coal-mines of the Dominion for the year ended 31st December, 1907.

The reports are divided into the following Sections:—

I. Output of Mineral.
II. Persons employed.
III. Accidents.
IV. General Remarks.
Appendices—
(*a.*) Inspectors' Reports.
(*b.*) Mine-managers' Examinations, and Certificate-holders.
(*c.*) Statistics of Working-collieries.

SECTION I.—OUTPUT OF MINERAL.

The output of the several classes of coal mined in each inspection district is summarised as follows:—

Class of Coal, &c.	Northern District.	West Coast District.	Southern District.	Total.
	Tons.	Tons.	Tons.	Tons.
Bituminous and semi-bituminous coal ...	138,853	1,045,358	...	1,184,211
Pitch-coal	...	3,268	18,792	22,060
Brown coal...	178,124	3,396	334,277	515,797
Lignite	...	...	108,941	108,941
Totals...	**316,977**	**1,052,022**	**462,010**	**1,831,009**

As compared with the output for the preceding year, the above statement shows an increase of 101,473 tons.

The following statement shows the production, &c., of the principal collieries:—

Name of Colliery.	Locality.	Class of Coal.	Output for 1907.	Total Output to 31st December, 1907.	Total Number of Persons ordinarily employed.
Northern District.			Tons.	Tons.	
Hikurangi Coal Company (Limited) ...	Hikurangi...	Semi-bituminous	56,809	520,522	70
Taupiri Coal-mines (Limited) ...	Huntly ...	Brown ...	162,046	1,724,585	365
Northern Collieries Company (Limited)	Hikurangi...	Semi-bituminous	48,498	233,971	75
West Coast District.					
Westport Coal Company (Limited) (Coalbrookdale Collieries)	Westport	Millerton, bituminous	297,754	2,334,460	469
		Denniston...	313,005	4,729,760	625
New Zealand State Coal-mines	Seddonville (Westport)	Bituminous	35,436	154,179	92
	Point Elizabeth (Greymouth)	"	205,337	561,208	286
Blackball Coal Company (Limited) ...	Blackball...	"	93,018	941,207	130
Tyneside Proprietary Coal Company (Limited)	Brunnerton	"	74,862	254,755	170
Southern District.					
New Zealand Coal and Oil Company (Limited)	Kaitangata	Brown ...	101,818	2,202,365	326
Nightcaps Coal Company (Limited) ...	Nightcaps...	" ..	49,337	567,776	94
Other collieries, in all districts ...	...	Various ..	393,089	11,037,176	1,208
Totals	...	...	**1,831,009**	**25,261,964**	**3,910**

SECTION II.—PERSONS EMPLOYED.

Inspection District.	Average Number of Persons employed during 1907.		
	Above Ground.	Below Ground.	Total.
Northern	124	513	637
West Coast	691	1,467	2,158
Southern	328	787	1,115
Totals, 1907	**1,143**	**2,767**	**3,910**
Totals, 1906	1,174	2,518	3,692

SECTION III.—ACCIDENTS.

Summary of fatal and non-fatal accidents classified, and cause:—

—	Fatal Accidents.		Non-fatal Accidents.	
	Number of Separate Fatal Accidents.	Number of Deaths.	Number of Separate Non-fatal Accidents.	Number of Persons injured, including those injured by Accidents which proved Fatal to their Companions.
Explosions of firedamp ...	...	...	...	...
Falls in mine	5	5	11	12
Shaft accidents	2	2	...	...
Miscellaneous—				
Underground	1	3	18	18
On surface	2	2	4	4
Totals	**10**	**12**	**33**	**34**

Lives lost per 1,000 persons employed, 3·07.

The following statement shows the tons of mineral raised (coal and shale), persons employed, lives lost, &c., from 1878 to 1907:—

Year.	Output of Mineral.	Persons employed.			Tons of Mineral raised per each Person employed Underground.	Tons of Mineral raised per Life lost.	Persons employed per each Life lost.	Lives lost per Thousand Persons employed.	Number of Deaths.
		Above.	Below.	Total.					
Prior ...	709,931	...	...	...	...	...	...	...	...
1878 ...	162,218	147	366	513	443	4,771	15	66·27	34†
1879 ...	231,218	...	...	802	...	115,609	401	2·49	2
1880 ...	299,923	...	...	1,038	...	149,961	519	1·92	2
1881 ...	337,262	...	...	963	...	337,262	963	1·04	1
1882 ...	378,272	...	...	1,043	...	189,136	521	1·91	2
1883 ...	421,764	361	888	1,249	475	210,882	624	1·60	2
1884 ...	480,831	393	890	1,283	540	160,277	421	2·34	3
1885 ...	511,063	338	1,145	1,483	456	170,354	494	2·01	3
1886 ...	534,353	392	1,213	1,605	440	*	*	*	0
1887 ...	558,620	388	1,111	1,499	503	139,655	375	2·66	4
1888 ...	613,895	414	1,275	1,689	481	153,474	422	2·36	4
1889 ...	586,445	466	1,251	1,717	261	146,611	313	2·37	4
1890. ...	637,397	512	1,334	1,846	477	79,674	231	4·33	8
1891 ...	668,794	416	1,277	1,693	523	167,198	423	2·36	4
1892 ...	673,315	485	1,196	1,681	563	673,315	1,681	0·66	1
1893 ...	691,548	590	1,298	1,888	533	138,309	377	2 64	5
1894 ...	719,546	506	1,393	1,899	516	119,924	316	3·16	6
1895 ...	726,654	525	1,274	1,799	618	145,331	360	3·33	5
1896 ...	792,851	590	1,347	1,937	588	12,013	29	34·07	66‡
1897 ...	840,713	531	1,381	1,912	609	210,178	478	2·09	4
1898 ...	907,033	556	1,447	2,003	627	907,033	2,003	0·49	1
1899 ...	975,234	554	1,599	2,153	609	325,078	717	1·39	3
1900 ...	1,093,990	617	1,843	2,460	593	273,497	615	1·62	4
1901 ...	1,239,686	688	2,066	2,754	600	413,228	918	1·09	3
1902 ...	1,365,040	803	2,082	2,885	655	682,520	1,443	0·69	2
1903 ...	1,420,229	717	2,135	2,852	665	355,057	713	1·40	4
1904 ...	1,537,838	763	2,525	3,288	609	384,459	822	1·21	4
1905 ...	1,585,756	833	2,436	3,269	651	264,293	546	1·83	6
1906 ...	1,729,536	1,174	2,518	3,692	687	288,256	615	1·62	6
1907 ...	1,831,009	1,143	2,767	3,910	662	152,584	326	3·07	12
Totals ...	**25,261,964**	...	...	...	...	...	...	...	**205**

* No life lost. † Year of Kaitangata explosion. ‡ Year of Brunner explosion.

SECTION IV.—GENERAL REMARKS.

Ventilation.

Attention continues to be directed to the improvement of ventilation, the most important department of all coal-mining operations, which not only affects the safety and health of all those whose duties take them within the mines, but by enabling the miner to obtain an adequate supply of pure invigorating air while occupied at his arduous calling the mine-owner unquestionably reaps a considerable benefit by the increased production of coal, the result of such improved conditions.

The obsolete and misnamed system, "natural ventilation," which would at times be more accurately described as "stagnation," is gradually being superseded at collieries worthy of the name, by centrifugal fans of adequate power, which, when accompanied by judicious splitting of the air and systematic bratticing to the working faces, is productive of the best results. The class of fan most favoured at the present time is that of the drum or multivane type, such as the Sirocco, and fans of this type are about to be installed at the Millerton Colliery of the Westport Coal Company (Limited) and at the mines of the new Paparoa Coal Company (Limited), near Greymouth. The Westport - Stockton Company, however, are installing fans of the improved Waddle type (a well-known and efficient ventilating machine), and these will be driven electrically. At the Nightcaps mine a second fan of the Hayes type has been installed for the ventilation of No. 2 section of the mine.

Electricity in Mines.

The permanent establishment of electricity as a motive power on the principal coalfields of the world is proved by recently published statistics. In the State of New South Wales a Royal Commission has recently presented a report on this subject, and it is therein stated that at the present time sixteen collieries have sixty-two coal-cutters, six have eight haulage equipments, nineteen have thirty-three pumps, six have ten ventilating-fans, and five have seven motors applied to other uses, all being electrically driven.

In New Zealand (where the Allandale Colliery was the first to instal this power for general purposes, and the Blackball and Denniston collieries for one department only) the new Westport-Stockton Company are about to make use of it to its fullest extent, including electric traction within the mine on a permanent-way of 3 ft. gauge.

With the advent of this power there arises the necessity for the establishment of rules for the protection of life and property, for electricity is a power with which no liberty may be taken. The dangers connected therewith are due to shock and fires, but it is reassuring to be able to state that when a well-designed plant has been properly installed and is under the charge of a capable man there should be little, if any, danger in its use, even with high voltage. In Europe very large high-tension installations have been successfully worked without accident, owing to the observation of proper precautions. The voltage that will cause death varies with circumstances —whether the individual is wet or dry, and the state of his health. A shock that one man can stand with but little inconvenience may cause the death of another. The chief causes of shock are leakages, which render metal "alive" that is thought to be inert, and by leaving portions of the circuit "live" where they are accessible to persons unacquainted with electrical risks.

Fires may be caused by electricity through over-heating a conductor by causing it to carry an excessive current, by leakage, or by arcs or sparks. Cases have been known where fine coal-dust that settled on incandescent lamps has become heated to such an extent as to become red-hot, although it is doubtful whether a single spark would ignite fire-damp, yet a series of sparks can.

The New South Wales Commission have suggested that the mine electricians be required to pass an examination as to competency, and the adoption of such a regulation in this Dominion seems worthy of consideration. The New Zealand Board of Examiners under the Coal-mines Act have at their last annual meeting unanimously adopted a regulation making practical elementary electricity a compulsory subject for all candidates for mine-managers' certificates of competency, and lectures on electricity are now delivered at the principal schools of mines throughout the Dominion.

Mining Operations.

On the North of Auckland coalfields coal-mining operations continue to supply an annually increasing output, although no new collieries have been opened during the year.

The Hikurangi Colliery, which appeared within measurable distance of exhaustion, has received a further lease of life by the absorption of the adjoining Phœnix and West Bryan properties.

At the Kiripaka Colliery well-placed bore-holes have proved what appears to be an extensive coalfield situated to the dip of the Ngunguru section.

Near Tangowahine, on the Northern Wairoa River, where a coal outcrop of superior quality and considerable thickness was accidentally discovered during bush-clearing operations in the early part of the year, nothing has been done to prove the extent of the coalfield, but an analysis of the coal by the Dominion Analyst places it in the same class as that mined at the Taupiri Colliery. Attention will, no doubt, be given to this coalfield when the more accessible mines in the Auckland Province are unable to supply all the requirements of an annually increasing demand for a useful household coal.

At the Taupiri Colliery an increased annual output has to be recorded. The mining operations of this company have, as heretofore, been concentrated upon the whole coal within their

Paparoa Coal-mining Company (Limited), Grey Coalfield.

View of Railway being constructed, showing Position of Incline Tramway and Entrance to the Mine.

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extensive and valuable properties, no pillar-extraction having been conducted at this colliery. During the year a slight subsidence gave some temporary anxiety to the management of the mine.

Operations at the Drury Colliery have been discontinued owing to the unsatisfactory quality and extremely faulted character of the coal.

The extensive holdings of the Taupiri West Company, which adjoin the property of the Taupiri Company, have not been very actively worked, owing to the flooding of the mine during the early part of the year.

At the Millerton Colliery of the Westport Coal Company (Limited) the usual all-round high efficiency in management has been maintained, and an annual increase of 33,753 tons in output has to be recorded. The principal operations at this mine other than the actual extraction of coal from the proved areas consists of the development of the Mine Creek, western section, and the extensive area south of the Mangatini Creek on the northern slopes of Mount Frederick.

At the well-known Denniston Collieries, also the property of the Westport Coal Company (Limited) (of which company Mr. Jonathan Dixon, M.E., is now district manager), in addition to the winning of a large coal output, extensive operations for the further development of the collieries have been carried out during the year. The Coalbrookdale haulage section is being connected by drifts with the extensive Whareatea section; another tramway bridge has been constructed across the Waimangaroa River, at a point below the old Ironbridge, which will thus connect the Kiwi section of the property, situated on the north side of the river adjacent to Deep Creek, with the main haulage system of the mine. At the Ironbridge section drifts have been put through connecting the upper with the so-far but little-worked lower seam, thereby further increasing the productive capacity of the property. Extensive alterations and additions have been made in connection with the screening and storage arrangements at the top of the upper incline, where the extremely limited space has necessitated the exercise of considerable ingenuity to enable the large output to be handled at a minimum cost and in such a manner as to avoid the production of small coal. Attached to the plant are storage-bins of 2,000 tons capacity for unscreened coal, to which are connected the gravitation tumblers by shaking screens. To utilise the limited space, travelling belts and elevators are considerably employed.

During the year boring operations for the purpose of ascertaining the extension or otherwise of the Buller coalfield under the coastal plain have been carried out on the coal-mining lease of Mr. Jonathan Dixon, and it is understood that a considerable depth has been attained, the strata pierced consisting chiefly of the later Tertiary marls and clay; but, as the results of such operations are not published, no further information is at present available.

Excellent progress has been made by the Westport-Stockton Coal Company (Limited) in the construction of their inclined and other tramways, surface arrangements, and other works necessary to enable them to enter the lists of producing collieries on a large scale at an early date. Tunnels of considerable length have been driven in the coal adjacent to and parallel with the eastern boundary of the Millerton lease of the Westport Coal Company, on that lengthy but narrow area of the coalfield which protrudes beyond the Millerton boundary. It is stated by the company's expert that an extensive area of coal has been proved to exist on the property in the section contained between the south branch of the Ngakawau River and the headwaters of Mangatini Creek. This area is referred to in the maps and reports of the Geological Survey, 1877 (Hector), on the Buller Coalfield, as Area 8, Mid Level A, and is of considerable geological interest.

On the Grey Coalfield (a plan of which accompanies this report), at the Blackball Colliery, a considerably increased annual output of coal has to be recorded, but the capabilities of this mine will never be proved until the completion of the Government railway now in course of construction to Blackball. Work is much retarded by the limited capacity and unreliable character of the aerial tramway, which is at present the only means of transport for the coal between the mine and the railway at Ngahere. Considerable proved reserves of coal exist within this company's lease.

The Paparoa Coal-mining Company (Limited) is actively engaged upon the construction of inclined tramways and surface arrangements preparatory to the opening-up of an extensive colliery. The inclined tramway for endless-rope haulage which will connect the mine with the screening and storage arrangements is being constructed in two sections, which, owing to the configuration of the country, are for the greater distance in tunnel, the lower section, having an average gradient of about 1 in 3, being in length 44 chains, the upper section 1 in 11 and 50 chains. The sectional measurement of the tunnels is 11 ft. by 7 ft. in the clear. Hydraulic brakes will control the haulage from the head of each section. The upper tunnel terminates at its junction with the coal seams, two of which are intersected by it. Recent developments have proved the existence of three seams, situated approximately 110 ft. and 120 ft. apart by vertical measurement. It is proposed to install compressed-air drills, a 70 ft. single-inlet Sirocco fan, and electric lighting.

On the Otago coalfields the Kaitangata and Castle Hill Collieries of the New Zealand Coal and Oil Company (Limited) have increased their annual output, and, notwithstanding quite exceptional conditions requiring extreme caution, have been remarkably free from mining accidents during the past year.

Operations at the Nightcaps Colliery, in Southland, have been retarded by an underground fire in section 1 of the mine. This, however, having now been sealed off, and a fan of the Hayes type erected on section 2, which was previously ventilated by natural means, a substantial increase in the annual production of coal may be anticipated.

Owing chiefly to the cessation of many gold-dredges in Otago and Southland, a decrease of 3,425 tons of brown coal and lignite has taken place during the year.

Coal-shipping Ports.

Westport.

The Port of Westport, from which is shipped the product of the Buller Coalfield, has made extraordinary progress in its development since operations were commenced in 1884.

The following table shows the official daily record of the depth of water on the bar for the years 1900–7, inclusive:—

Depths on the Bar.	Number of Days during Year							
	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
14 ft. to 16 ft. ...	...	...	15	...	...	...	...	...
16 ft. to 18 ft. ...	4	30	37	17	...	...	3	...
18 ft. to 20 ft. ...	20	62	94	87	44	14	60	29
20 ft. to 22 ft. ...	131	174	143	135	48	142	175	150
22 ft. to 24 ft. ...	159	82	70	109	161	169	119	149
24 ft. to 26 ft. ...	51	17	5	17	100	40	8	35
26 ft. to 28 ft. ...	...	...	1	...	13	...	...	2

It will be seen that the return for the past year shows a considerable improvement on previous soundings by a greater conformity in depth, and the harbour has never before been in such a satisfactory condition, mainly due to the raising and extension of the eastern breakwater and the efficient dredging operations, as proved by the almost entire absence of freshets or runs in the river during the year.

Within the harbour the average depth in the fairway was 24 ft., as against 22 ft. 1 in. during 1906.

The enormous increase in the shipments of coal may be judged from the fact that whereas during 1885 the total shipments were 78,094 tons, the shipments for 1907 amounted to 645,148 tons, and it may reasonably be anticipated that with the advent of new collieries and the increased output of those at present in operation, this annual increase in the shipments of coal from this harbour will be maintained.

The revenue of the Harbour Board, which in 1885 amounted to £8,107 13s. 11d., has gradually increased year by year, until in 1907 it amounted to £80,927 12s.

During the year 1,153 steamers and 17 sailing-vessels, aggregating in tonnage 599,872, worked Westport.

The construction of a floating or loading basin, estimated to cost £100,000 or more, is now being carried out, and this will, when completed, enable vessels of 600 ft. in length, and drawing 24 ft. of water, to be dealt with.

Greymouth.

The Port of Greymouth, from which is shipped the product of the Grey Coalfield, together with a considerable quantity of timber and other merchandise, has been navigable for 323 days during the year, and the average depth of water on the bar at high water is officially recorded at 22 ft., whilst the average depth in the river under similar conditions was 20 ft.

The number and tonnage of vessels entering the port was—743 steamers, of 334,613 tons register; 38 sailing-vessels, of 8,428 tons register: total, 343,041 tons register.

The shipments of coal amounted to 340,047 tons, in addition to which 44,194,888 superficial feet of timber and about 10,000 tons of other merchandise were exported.

The berthage accommodation available amounts to 2,770 ft., but this is being further increased by the construction of a tidal dock in the Kororo Lagoon, which, when completed, will give additional berthage of 2,000 ft., which will no doubt require further extension in the near future.

With the development of new collieries in the Paparoa and Point Elizabeth districts, the Coal Creek Railway extension, and the near completion of the Blackball and Midland Railways, the increasing importance of Greymouth as a shipping port is assured.

I have, &c.,

Frank Reed,

Inspecting Engineer of Mines.

APPENDIX A.

MR. BOYD BENNIE, Inspector of Mines, Thames, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Inspector of Mines' Office, Thames, 28th February, 1908.

In compliance with section 75 of "The Coal-mines Act, 1905," I have the honour to report on the coal-mines in the Northern District for the year ended 31st December, 1907.

Kawakawa (Samuel Neill, manager).—The manager's attention has chiefly been directed to prospecting and extracting pillars of coal near the surface. As may be expected, the atmospheric influences on the coal won from the pillars have reduced it to a poor quality, but being originally a superior class of coal it is found to be excellent for steaming purposes. The owners have done very little work in the mine, but they intend prospecting in a systematic manner, with a view to opening up a section of the coalfield when the railway connection between Hikurangi and Kawakawa is completed. The mine was inspected several times during the year, and on each occasion operations were being conducted in a careful and efficient manner. 559 tons of coal was extracted, and an average of four men employed.

Hikurangi Coal Company (Limited) (T. P. Moody, manager).—The company has confined its attention principally to extracting pillars on the western side of the Government railway. The cover over the coal in this part being thin and of a swampy nature, the work was consequently attended with some risk of flooding the mine. In the early part of the year a consistent fall of rain, lasting a few weeks, placed the company in a precarious position, as mining operations were hampered by floods, and the demands of customers could not be adequately met. The company showed itself alive to the situation by installing an additional pumping plant, and after a loss of some time this section was worked out. The company also sustains a heavy loss in not being able to extract more than 80 per cent. of the coal without running the risk of flooding the mine. This precaution is imperatively necessary, as the removal of a greater quantity of coal would result in the overhanging strata caving in and allowing the drainage from the swamp to enter. The coal under the railway is practically left intact, with the exception that drives for haulage and ventilation are cut through. On the eastern side of the railway there is still a large quantity of coal, which can be extracted without any danger or loss through flooding. This mine has been continuously worked for the past fifteen years, during which time coal to the extent of over half a million tons has been won from the earth. This enormous output has left the mine well nigh exhausted, and already the end is in view. But the company has obtained an extension of life by securing a valuable section adjoining the Phœnix and West Bryan properties. It is confidently anticipated that the development of this property will be a most remunerative undertaking. On my visits of inspection to the mine I have found the ventilation good and every care exercised to insure the safety of the workmen. The output for the year—a record one for the company—was 56,809 tons, an increase of 4,100 tons over the previous year. Eighty-two men were employed, and dividends to the extent of £1,875 paid for the year.

Northern Coal Company (Limited) (W. R. Dunn, manager).—As previously reported, improvements were being made in the main haulage road, which, on completion, would materially increase the output and effect a great saving in the cost of haulage. So far very little headway is manifested, but all possible skill is utilised in whatever progress is made. At different times throughout the year the ventilation was not all that could be desired, and during my visit on the 18th November, 1907, it was found defective. I immediately drew the manager's attention to the matter. He intimated his intention to me of remedying the defect by installing a fan at an early date. During one of my visits to the pillar district, where some men were at work extracting pillars, I found, after a fall of overlying cover, that there was a heating (the beginning of a gob fire). The manager was warned of the great danger and directed to take precautions to close off the affected area. However, on my last visit I found that matters had improved to such an extent as to dispel any apprehension of danger. The development work, &c., were carried out efficiently, and, in compliance with the Act, a plentiful supply of timber and mining requisites are always on hand. The seam still maintains its uniform size and quality, which makes the property a very valuable one indeed. The output for the year reached 48,498 tons, enabling the company to declare a dividend at the rate of 10 per cent. Seventy-five men were employed.

Kiripaka Colliery (E. W. Tattley, manager).—Since the Northern Coal Company has held this property extensive development works have been carried out. Attention was directed to opening up an area of coal of an excellent quality and so hard a nature as to necessitate the use of coal-cutting machinery. The seam in places averages a thickness of 16 ft., and, judging from the bores put down, there appears to be an immense coal-area lying mostly to the dip of the Ngunguru section, where the seam was very thin and faulty. Boring results show that this seam is the outcrop of the main coalfield. The main dip was extended a further distance of 300 ft., making 900 ft. in all. The ventilation-fan recently installed has not given entire satisfaction. It was thought at first that considerable improvement would be manifested in this line, but it is ascertained from results that the amount of ventilation is at times inadequate. A steam-boiler and an additional pump have been installed, with the object of extending the main dip and developing the mine in a general way. I regret to state that a fatal accident happened in this mine through a train of empty trucks descending the main dip incline and crushing a workman named William

Bentall. The accident arose through the braceman or his assistant failing to attach the haulage rope to the train of trucks before lowering them into the mine. At the Coroner's inquest the jury returned a verdict to the effect that the evidence was so conflicting that no person could be singled out for blame. The mine when inspected from time to time was found to be in good order, strict regard being paid to the safety of the men, leaving, on the whole, little cause for complaint. The company has established a record return for this year, the amount of coal obtained amounting to 32,987 tons, which is a substantial increase over the previous year. In addition to this, 900 tons of fireclay of a superior quality was mined. Seventy-four men were employed, and a dividend of 10 per cent. paid.

Union Collieries (F. J. Tattley, manager).—During the year no important works were undertaken, mainly owing to the obstructions which prevailed for a greater portion of the time. Of all the companies, perhaps, this one in particular suffered most acutely from the January floods. The exceptionally incessant rains in that month flooded the swamp near by, and the overflowing water found its way into the mine and flooded it. Mining operations were completely suspended until the mine was unwatered to a depth enabling work to be resumed. It was then discovered that enormous damage had been done to the main drive, and that a quantity of *débris*, carried in by the water, was everywhere present. The time consumed in the work of repair and restoring former order caused a severe falling-off in trade and output, the latter showing a decrease of 9,540 tons. At times the ventilation has been defective, in consequence of which the company has been directed to sink another shaft. This work was deferred until such time as the mine was got into good order, and now that this is done the work of sinking will be started without delay. The seam worked is exceedingly thick, and naturally the working-places are extended at a slow rate. The output of coal reached 10,388 tons, and an average of thirty men were employed.

Taupiri Coal-mines (Limited)—Ralph's Section (E. S. Wight, manager).—The company has not done any development work of importance, such as extending the main south-west dip headings to intersect the property underlying Lake Waahi, acquired some three years ago by this company. To some extent this may be attributed to the fact that great attention is being devoted to grading the work already done, so as to give a uniform grade for the haulage-way. With a view to proving the thickness of the seam in the new property several bore-holes were sunk, but the results have not been made known. A new travelling-way, separate from the haulage-way in the south-west section, has been constructed, and it is a decided advantage over the old one, being more direct and far safer. Several inspections of the mine were made at different intervals, and the ventilation was found to be all that could be desired. Everything else, with the one exception, gave entire satisfaction. In January the mine-manager reported a creep in the pillar district immediately beneath the Waikato River, and that he considered it so serious that he had withdrawn the workmen. Your Inspectors visited the mine a few days later, and, in company with the mine officials and two representatives from the miners' union, carefully examined the pillar section, and found that the pillars were considerably damaged, in their opinion, by cold air being circulated through the section after it had been closed off for some time and become heated. Your Inspectors believed that there was no immediate danger, and advised that work might be resumed, but that the company should take such measures as would adequately protect the workmen against a serious disaster occurring. The workmen were very much alarmed, no doubt through the manager withdrawing all workmen from the mine when the crushing of the pillars was observed, which action was approved by the Inspectors as a wise precaution. After a little hesitation on the part of the men, work was resumed at the mine. The precautionary measures subsequently taken for the future safety of the men and the mine did not meet with our approval, and, as a result, the matter was referred to arbitration, as provided for in sections 55 and 56 of "The Coal-mines Act, 1905." The Court's decision, as reported to the Department, relieves the company from compulsorily sinking another shaft, but, to guard against a disaster, pillars should be strengthened. The output for the year reached 97,878 tons, and 183 men were employed.

The Extended section (Wm. Wood, manager): The work in the mine is confined to the dip section; west of the shaft, and underlying the Waikato River. The development work headings have been pushed on, and a considerable area of coal opened out. The haulage roads and machinery connected therewith have been much improved during the year, and with an up-to-date screening plant the mine should maintain a modest output of coal, which is of good quality, and has a ready sale at Auckland and Waihi for household and steam purposes. Since the installation of improved furnaces and fire-grates the small coal which was formerly thrown away as waste is now purchased by the mining companies. For the year slightly over 9,000 tons of small coal has been sold from this mine alone. Several visits of inspection were made, and it was found that great care was being exercised for the safety of the men. The ventilation was good, the newly erected Sirocco fan giving complete satisfaction. In this section of the company's property 152 men were employed.

Taupiri Reserve (Wm. Wood, manager).—This section, like the Ralph's and Extended sections, is underlying a water area, the surface overlying the coal being covered by Lake Kimihia. The mine is entered by an incline drive of considerable length to the deep levels, and is worked on the bord and pillar system also. Great care has been taken in opening up the mine, and strong pillars of coal are left in to support the overlying strata and prevent the flooding of the mine. The coal is of a good quality, and the seam is very thick. This mine has been continuously worked for twenty years, being the oldest mine in the Waikato district, and has produced over 300,000 tons of coal. The mine is a comparatively dry one, and is worked at little cost, no expensive machinery being required. Very few men are employed in this section, since it is reserved to meet any sudden demand that may be made. The mine is in good order, and well ventilated.

Drury Colliery (J. Holden, manager).—This mine has proved a disappointment to the management and shareholders, the coal being not only of poor quality, but very much broken by faults,

with seams of shale and fireclay running through it. At first it was thought that as the drives extended into the hill a more solid formation of country would be met with, and that the quality of coal would improve. It was also thought that the faulting would be less frequent. Unfortunately this has not been the case. But for the superior class of fireclay over and underlying the coal the mine would have to be shut up. The brick and tile works erected at the mine are now turning out good work, the bricks, tiles, and retorts being of first-class quality. The company was awarded prizes for its exhibits at the International Exhibition held at Christchurch, and I believe it has no difficulty in disposing of its products at profitable rates. Four men were employed at the mine, and 487 tons of coal, with 929 tons of fireclay, were mined. When inspected the mine was found in good order. Unfortunately, in the early part of the year a miner met with a fatal accident, through a piece of coal falling on him. The Coroner's jury returned a verdict in accordance with the evidence, to the effect that deceased met his death through a fall of coal, no blame being attachable to any one.

Taupiri South (J. Duncan, manager).—After spending a considerable amount of capital in prospecting and opening up several drives, from which a small quantity of coal was extracted, the undertaking has proved unprofitable, and the mine has been closed down.

Taupiri West Coal-mine (Limited) (R. McEwen, manager).—This is a new colliery, situated on the western side of the Waikato River, and adjoining Ralph's section of the Taupiri Coal-mine's property. The development work has been hindered through the flooding of the mine in the month of January, when the heavy rainfall caused the waters of Lakes Rotoiti and Wahi to rise and overflow, the water finding its way to the company's shaft. After unwatering the mine a concrete wall 6 ft. high was constructed around the pit-mouth to guard against flooding in future. For reasons best known to the directors the work of erecting winding and other machinery has not been gone on with. This, in a degree, has also helped to retard development work. Much work has yet to be done in the mine and on the surface, such as erecting tram-lines and a screening plant, before the company is able to put its coal on the market. The mining operations were always found to be conducted with efficiency and care, and the ventilation good. An average of eighteen men were employed.

Mangapapa Coal-mine (William Lennox, manager).—This small colliery is owned and worked by G. H. Stubbs, of Waitara. It is situated about twenty miles up the Mokau River, and has been working in a small way for over twenty years. The seam is 7 ft. thick, and the coal of excellent quality. The field is an extensive one, but, as the means of transport by sea to Waitara and New Plymouth are exceedingly irregular and unsatisfactory, the development work has not been extensive. Only 4,967 tons of coal was extracted, being an increase of 722 tons over the previous year. The mine has been safely worked, but the ventilation was very poor. The management was informed that improvements would have to be effected in this department without further delay, and I believe a fan will be installed at an early date. An average of twelve men were employed for the year.

Waikato Medical and Accident Society.—The amount of moneys, including compensation-claim and funeral expenses, expended by the Waikato society for the year was £235 9s. 2d.

I have, &c.,
BOYD BENNIE,
Inspector of Mines.

MR. ROBERT TENNENT, Inspector of Mines, Westport, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Westport, 27th March, 1908.

I have the honour, in compliance with section 75 of "The Coal-mines Act, 1905," to report as follows on the West Coast coal-mines for the year ending 31st December, 1907:—

Golden Bay Coal-mine, Motupipi.—(15/12/1907): All operations on this property have been suspended during the greater part of the year.

Pakawau Coal-mine (owner, E. G. Pilcher, of Wellington; P. McCaffrey, mine-manager).—(13/12/1907): Mining operations have been exclusively confined to prospecting. The low-level rock-tunnel, having cut the coal-seam at a driven distance of 850 ft., connection was accordingly made with the old dip-heading, to maintain permanent ventilation with the rise-working. According to a report furnished by Messrs. R. A. Alison, of Brunnerton, and J. Leitch, of Blackball, on the probable possibilities of the coalfield, a workable seam was considered to exist in the lower measures within reasonable depth, and on this hypothesis boring has been continued at the face of the tunnel to a depth of 120 ft., without indications of coal.

Puponga Colliery (owners, Puponga Coal and Gold-mining Company (Limited); Alfred Taylor, mine-manager).—(13/12/1907): During the year the general management sustained important changes, but so far the altered conditions have had no detrimental effect on the general working of the colliery. Output shows a decrease of 3,961 tons as against the preceding year. Probably the most important factor in connection with the future development of the deeper levels was the addition of a compound double-acting plunger-pump, now suitably installed, to facilitate the deeper sinking operations of the main dip haulage-road. This installation was completed in the early months of the year, and sinking further continued to a total depth of 1,188 ft. Development has been recently directed to open the western district on the long-wall system, the thickness of the seam and nature of the roof being suitable. The general equipment in steam-power and pumping plant are meantime adequate for all practical requirements, while screening and washing are features which receive special attention in preparing the coal for market. The ventilation by fan is efficient, and timber is plentiful for all classes of work. The shipping channel has been dredged. Reports are to date. Four inspections have been made.

Taitapu Gold Estates (Limited) (N. L. Buchanan, attorney).—This company is now prospecting for coal on their property, and in furtherance of this work six men are engaged on three shifts, cross-cutting a coal-seam about 11 ft. in thickness, with the intention of ascertaining the extent and direction of the coal-seam. In addition to the six men mentioned, two other miners are engaged to open and develop the seam on another part of the property, whilst a third party will prospect for outcrops on the opposite side of the gully, situate in the vicinity of the first-named workings.

Mokihinui Colliery.—The only item of importance is the old smouldering mine.

Westport-Stockton Coal Company (Limited) (Geo. H. Broome, mining manager).—(7/12/1907): The varied works in connection with this property continue to be in the development stage. B and C tunnels have been completed during the year—B tunnel, 62 chains in length, intersecting the coal-seam lying between Mine Creek and Mangatini Creek; and C tunnel, 26 chains in length, intersecting the coal-area lying between Mangatini and Ford's Creeks. D tunnel has also been driven a short distance, but will be further extended before commencing to put out coal. As stated in report of last year, the ventilation for tunnel driving has been efficiently induced by No. 5 Sturtevant fans, driven by Tangye oil-engines, 2½-horse power, exhausting through iron pipes, 12 in. diameter. The main ventilation of the mine, however, will be induced by electrically driven fans of the improved Waddle type. The formation of the tramway from the mouth of A tunnel to the brake-head on Swampy Flat has been completed, with the exception of a small gap at Sandy Creek, where a culvert of large dimensions has been constructed, and the valley crossed by a large embankment. The formations in general are constructed in a substantial manner, and bridging avoided, embankments having been found more practical and economical in all cases. The formation for the upper incline, 40 chains in length, with an average grade of 1 in 6·7 and a maximum grade of 1 in 5, is now completed, with the exception of a big filling where an embankment is being constructed in preference to bridging. Also the formation of the lower incline, and the bridge over Mine Creek, are completed, grading having received special care in both inclines. On the upper incline, 7 chains of sandstone tunnelling was encountered, but the lower incline is open the whole distance. Referring to the hydraulic-brake installations, the site for the upper brake is being prepared, and on the lower incline the site has been excavated. Both inclines are to be worked on the endless-rope system of haulage. The Ngakawau rock tunnel, 28 chains in length, with a gradient of 1 in 63 in favour of the load, has been completed and railed, whilst the approach is finished and strengthened by the construction of a concrete arch with wing walls. Towards the construction of the storage-bins and screening-plant, the piles for the foundations, and the trestle work for the viaduct which connects with the Ngakawau Tunnel mouth have been driven, and the several buildings in which Australian ironbark timber is being largely employed are making satisfactory progress. Also, the concrete foundations for the power station, which fronts the Government railway and the company's sidings at Ngakawau, are being actively pushed. Steam will be supplied by four Babcock and Willcox boilers, which are now being installed. Special care is being observed throughout to insure permanence in the working details, and safety to life and property. Whilst the rock and coal tunnels were being driven, examinations with locked safety-lamps were made before the commencement of each shift of eight hours, and the reports accordingly made.

Millerton Colliery (owners, Westport Coal Company, Limited; George Fletcher, mining manager).—(5/12/1907): Mining operations and general equipment continue to maintain their usual high efficiency, while the tonnage raised was 297,754 tons, a total increase of 33,753 tons as compared with the preceding year.

Mine Creek section: With reference to the Mine Creek section of solid and pillar working, which comprise the chief centre of supply, underground operations have been non-important, the removal of pillars being exclusively confined to hand-labour, and solid work to coal cutting by machinery, attention having been chiefly directed to extend the development of the adjoining southern section of the lease across the Mangatini Gorge. This extension being of considerable magnitude, work of a difficult and expensive character in rock driving and heavy surface cuttings was undertaken, and in order to maintain a direct and permanent line of haulage, the mountain stream was wisely diverted through a stone-built culvert of adequate dimensions. These works are, however, nearing completion, and the management anticipates that coal will be produced from this new area some time in March. Work is likewise in progress to install two new Babcock steam-boilers and a Sirocco fan of high capacity.

In addition to the extensive mining works under review, the company is building a large and commodious boarding-house, suitably situated near the mine-mouth, which will provide comfortable quarters for the workmen employed, and tend much to lessen the travel over this hilly region.

The New Tunnel district has, during the year, received more than ordinary attention, the output showing a total of 27,471 tons, while the quality and thickness of the seam is maintained. On the western section of the lease faulting was encountered, and driving actively pushed with rock-drills, actuated by compressed air, for a distance of 450 ft., while the tunnel face now operated on is a compact body of grey granite, the hardness of which almost defies the hardest steel. Water is plentifully supplied for boring purposes, and adequate ventilation is produced at the working-face by compressed-air blast.

The provisions of the Act are strictly observed in every detail. Unfortunately, I have to report the first fatal accident which has happened to a coal-miner in this colliery, against a total of 2,334,460 tons of coal produced.

Denniston Collieries (owners, Westport Coal Company, Limited: J. Dixon, mining manager).—During the year 1907 the gross tonnage raised and lowered down the inclines for shipment was 313,005 tons. The Ironbridge Mine worked double shift and the Coalbrookdale Mine single shift. In a general way development has been kept well apace with the workings, and, with respect to

quantity and quality of coal-seam developed, evidences point to satisfactory conditions being maintained well into the future.

Coalbrookdale Mine (5/11/1907).—The productive capacity of this mine shows no depreciation. In fact, with the steadily increasing solid work developed in the Cascade Dip district, together with the constantly increasing pillar areas now operative in the Lady Glasgow and other rise sections of the mine, the production has not yet attained its maximum, and, in order to further strengthen the productive capacity, coal-cutting machinery, actuated by compressed air, was again introduced in October last, with satisfactory results.

In Munsie's section all solid coal available is reduced to pillars, consequently the output is wholly dependent on their extraction, and, as the natural working conditions are reasonably favourable, the percentage of coal won may be taken as a high average.

In view of further extending operations in connection with the Coalbrookdale Mine into the Whareatea lease area, a tunnel is now being driven, which, when completed, will enable the main endless-rope haulage to be continued in direct line into the extreme boundary of the lease.

As mentioned in a previous report, the East Cascade district of pillars was abandoned to await a more favourable means of extraction from the Cascade Dip district. This extension is now well advanced, and when a suitable connection is effected, the management anticipate extracting all the coal available, and finishing that section of the mine.

Ironbridge Mine (6/11/1907).—Whilst extending the Dundee Dip section of working in the direction of Mount William, faulting of a formidable character has been encountered and dealt with by a series of rock-drivings, by which the coal-seam is proved in close proximity to the base of the mountain, a condition not hitherto anticipated by the engineers when drafting the application for the original lease. Notwithstanding, however, the adverse effects which faulted ground has on the mining operations, prospecting and development have made steady progress.

In the Kiwi district solid work is practically finished to the outcrop, the output being chiefly maintained by the extraction of pillars, from which a high percentage of coal is won. In continuation of this section into the Deep Creek area, development has been carried out as opportunity offered. The permanent roadway is now laid for the endless-rope haulage from the junction of the main haulage in the mine, and extends across the girder bridge newly constructed over the Waimangaroa River. This direct line of double tramway will be further extended 5¾ chains in rock, to the northern bank of Deep Creek, which will be subsequently bridged and the roadway continued to the outcrop.

To reopen and work several acres of solid coal adjoining the old shaft-working, now standing some fourteen years, a low-level rock-adit is being vigorously driven by rock-drills, which, on completion, will facilitate mining operations, and drain the deepest levels of the basin. This development must necessarily tend to extend the life of the mine.

Owing to the scarcity of labour during the latter months of the year, development and ordinary operations have been much retarded. In general equipment, ventilation, and timbering, mining operations maintain their former efficiency. Two fatal accidents were reported from Ironbridge Mine during the year. There were fifty thousand shots fired, with an average yield of 6·52 tons per shot.

Prosecutions: Warden's Court, Westport (7/8/1907).—Michael MacKay, for travelling on rope road, was fined 10s.; Court costs, 9s. Warden's Court, Westport (4/9/1907).—McCullough and Kernohan, for firing shot without permission, and using bad language, were each fined £1; Court costs, 8s. 3d.; and counsel's fee, 5s. 3d. Warden's Court, Westport (15/10/1907).—Sidney Hammond, for breach of Special Rule No. 89 (trespassing), fined 10s.; Court costs, 7s., and counsel's fee, 10s. 6d.; also for breach of Special Rule No. 57 (abusive language), fined £1; Court costs, 7s.; and counsel's fee, 10s. 6d.

Coal Creek Coal-mine, Buller Road (George Walker, lessee).—This mine continues to be shut down, the mouth of the tunnel having collapsed bodily, with all rail material inside.

White Cliffs Coal-mine, Buller Road (Job Lines, lessee).—(30/11/1907): This mine is worked by a miner and a youth, who get steam-coal sufficient to supply the Old Diggings and Buller Junction Dredges. The seam is 12 ft. in thickness, with average rock roof, and is a fair hard coal for general purposes.

Flaxbush Coal-mine, Three Channel Flat (S. De Filippi, owner).—(29/11/1907): This party having purchased the Mokoia dredge the coal is worked in conjunction, it being only suitable for steaming purposes. Working conditions and ventilation are well maintained.

Bourke's Creek Coal-mine (owners, Cairns and McLiver).—(20/11/1907): Of late this mine has been worked on starvation principles, while the tram-line and other works therewith connected have lapsed into a very dilapidated condition. Happily, the party has been recently strengthened by an additional partner, who seems to apply more energy towards improving the plant and working conditions, and not before time.

Lockington's Leasehold, Bourke's Creek, Reefton (Elisha Lockington, owner).—(20/11/1907): This is another of these mines not pushed excessively, even so far that working conditions are in fair order and the mine well ventilated. The difficulty may be summed up thus: The coal-seam is much troubled with pyritic stone which not only tends to increase cost, but the energy demanded from the miner's shoulder is likewise increased.

Archer's Freehold, Capleston (F. W. Archer, owner).—(20/11/1907): The Nos. 1 and 2 tunnels are partially exhausted and meantime abandoned, the coal being taken from the upper seam (20 ft. thick), recently opened by a rock tunnel on a lower level of the freehold. This seam is of first-class quality, and rock-driving is continued in direct line from the surface, to win the bottom seam, which should also measure 20 ft. This is a valuable property, provided capital was available to construct an economic system of haulage that would connect with the completed section of the Reefton – Inangahua Junction Railway, at Cronadon.

Coghlan's Freehold, Capleston (J. Coghlan, owner).—(20/11/1907): The coal on this property is being taken from a low level recently opened on the base of the terrace which forms the north bank of the Boatman's Creek, quality and hardness of seam being favourable for steaming and household purposes, whilst hauling and cartage are much shortened as compared with the old mine.

Waitahu Coal-mine, Reefton (J. O'Donnell, owner).—(20/11/1907): During the year this mine has been worked continuously on the 6 ft. seam by two miners, the coal, although soft, being highly suitable for household purposes. The working is much hampered by the high percentage of slack coal produced, as the river is the only practical outlet for this waste product. The roof requires careful timbering, and ventilation is well maintained.

Reefton Coal Company (John Harris and party).—(19/11/1907): The two rise sections of this mine are meanwhile abandoned, and work is exclusively confined to getting coal from the No. 3 level east, the quality and hardness of the seam showing improvement at depth, as compared with the original rise working, while connection for ventilation and a second outlet has been amply provided. The plant is in good order.

Town Belt Coal-mine (Morris and Leishman, owners).—(19/11/1907): This mine was recently opened by a short stone drive to win an underlying coal-seam 4 ft. 6 in. in thickness, the quality of which is well suited for steaming and household purposes, while cartage to the town is considerably reduced. Referring to the work done, driving from the rock-tunnel has been extended east on the level course of the seam for a distance of 200 ft. and connection effected with the surface for ventilation and second outlet. Generally, the mine and plant are in good order, and straight and good roads are made a special feature.

Murray Creek Coal-mine (owners, John Morris and party).—(22/11/1907): This party has worked very energetically to open out an old pillar area adjacent to and in continuation of the old Golden Treasure lease, situate near the head of Murray Creek. The coal won is of superior quality, but to clear away the loose overburden in order to effect complete extraction heavy and arduous work has to be encountered.

Golden Treasure Coal-mine, Murray Creek (J. Billett, owner).—(22/11/1907): Open face. Beyond the ordinary routine of sluicing and clearing off the surface stripping, other work is non-important. The quality and hardness of the seam having improved recently a good market for household coal is obtainable, while the slack is in demand for steaming at the Energetic Mine and Golden Fleece Battery.

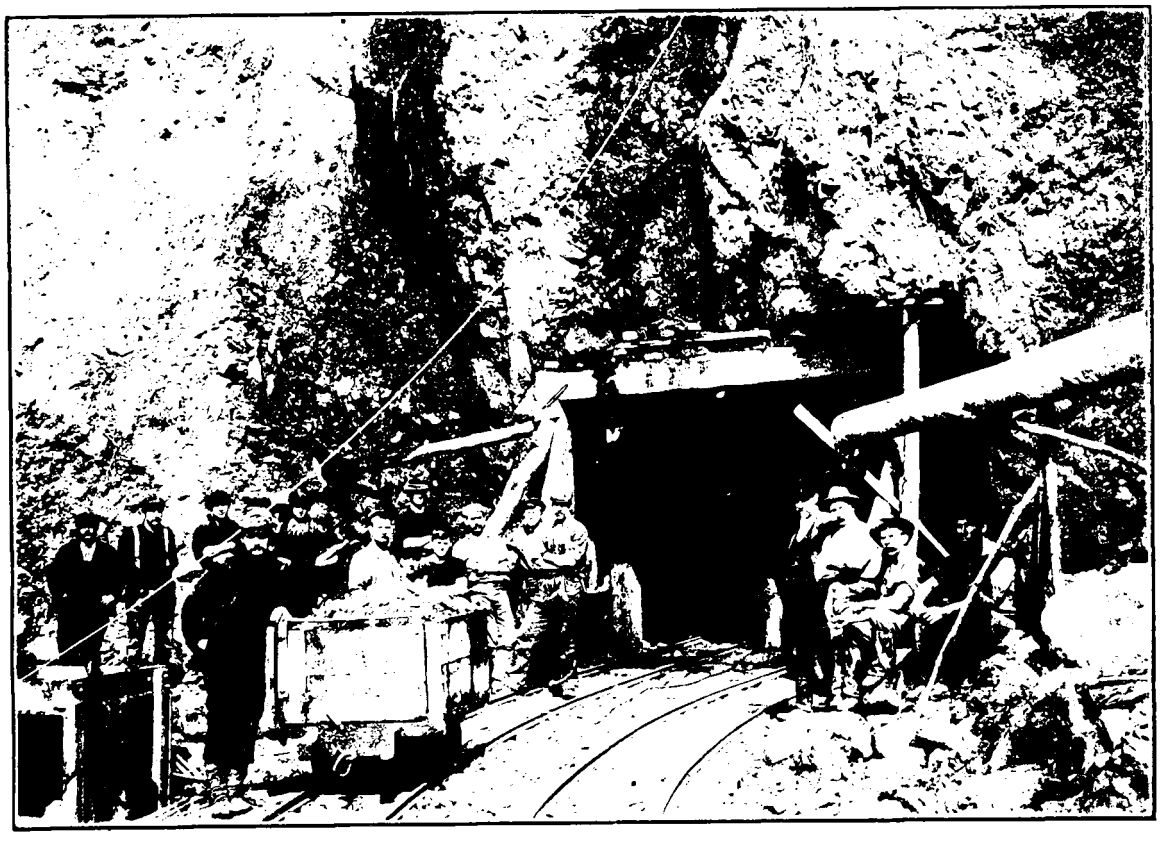
Phœnix Coal-mine, Reefton (John Knight and Co., owners).—(22/11/1907): In continuation of my report of last year, relative to the suppression of the fire in this partly exhausted mine, water was successfully laid on from the upper reaches of the Victoria Creek, and, although the supply was cut off during the excessively dry season, indications of heating were confined to a very limited area when visited. (20/20/1908): Directly the fire was suppressed along the dip boundary of the lease, the County Council granted the owners permission to divert the dray-road for the purpose of winning a section of superior open face coal, located in the bed of the creek. Having won the coal and diverted the road to the satisfaction of the local authorities, further encroachment on the heated area was abandoned, and work resumed as usual on the Venus lease, from which supplies are now taken.

Lankey's Creek Coal-mine, Reefton (owners, Pascoe and Watson).—(19/11/1907): This property continues to maintain a better standard, both with respect to plant and working conditions, ventilation being obtained from two connections recently made with an old district standing on pillars. The quality and hardness of the seam provide a superior household fuel, and, having recently obtained the contract for the supply of steam-coal at the Keep It Dark Mine, the demand for slack coal is equal to the supply.

Progress New Coal-mine, Reefton.—(21/11/1907): Faulting on the main winning headings having cut off the supply riseward, coal for direct use has been largely taken from the open pillars. In view of cutting the fault more advantageously on a lower level, driving is continued for that purpose, and, as usual in this coal formation, irregularity of roof has been very pronounced of late. Thus, cost in permanent road-construction is much increased.

Loughnan's Coal-mine, Reefton.—Since change of ownership this mine has been shut down.

Blackball Colliery (owners, Blackball Coal Company, Limited; James Leitch, mining manager).—(16/11/1907): Although the limited and unreliable system of aerial haulage installed at this colliery tends much to interfere with the economical transport of mineral to the Government Railway siding at Ngahere, the output has nevertheless maintained a substantial increase of 19,331 tons, as against the preceding year. During the year coal for commercial purposes has been chiefly taken from the western section of the property. The winning levels still continue to prove coal-seam of good average quality and thickness over an unbroken area of one mile in length, extending from the bottom of the rock tunnel, 600 ft. in length, which connects with the surface. These levels having now passed the extreme limit of the old exhausted rise workings, preparatory work is in progress to set away two main winning headings, calculated to prove the extent and quality of the coalfield to the rise boundary. With reference to the advantages gained by the introduction of the Panel system *versus* the ordinary pillar and stall, where experience has proved the coal-seam to be ruinously subject to spontaneous combustion in the old rise working, it is interesting to note that where indications of spontaneous heating have existed in the present districts of dip-working, risk to life and property have not yet been seriously experienced when sealing off any affected part with a minimum loss of coal, and inconvenience has not been experienced thereby to the workmen engaged in any other part of the mine. Endless-rope haulage is permanently installed, and during the year was further extended 400 yards, whilst an additional extension of 800 yards is contemplated during the coming Easter holidays, when the completed haulage service will exceed a mile in length to the point of delivery. Ventilation is induced



Entrance to Tunnel on Upper Incline Tramway. Length, 52 chains; gradient, 1 in 11.

Entrance to Tunnel on Lower Incline Tramway. Length, 20 chains; gradient, 1 in 3.

A Colliery in the Making. The Paparoa Coal mining Company (Limited): Grey Coalfield.

To face p. 12.

Plan of the
—GREY COALFIELD.—

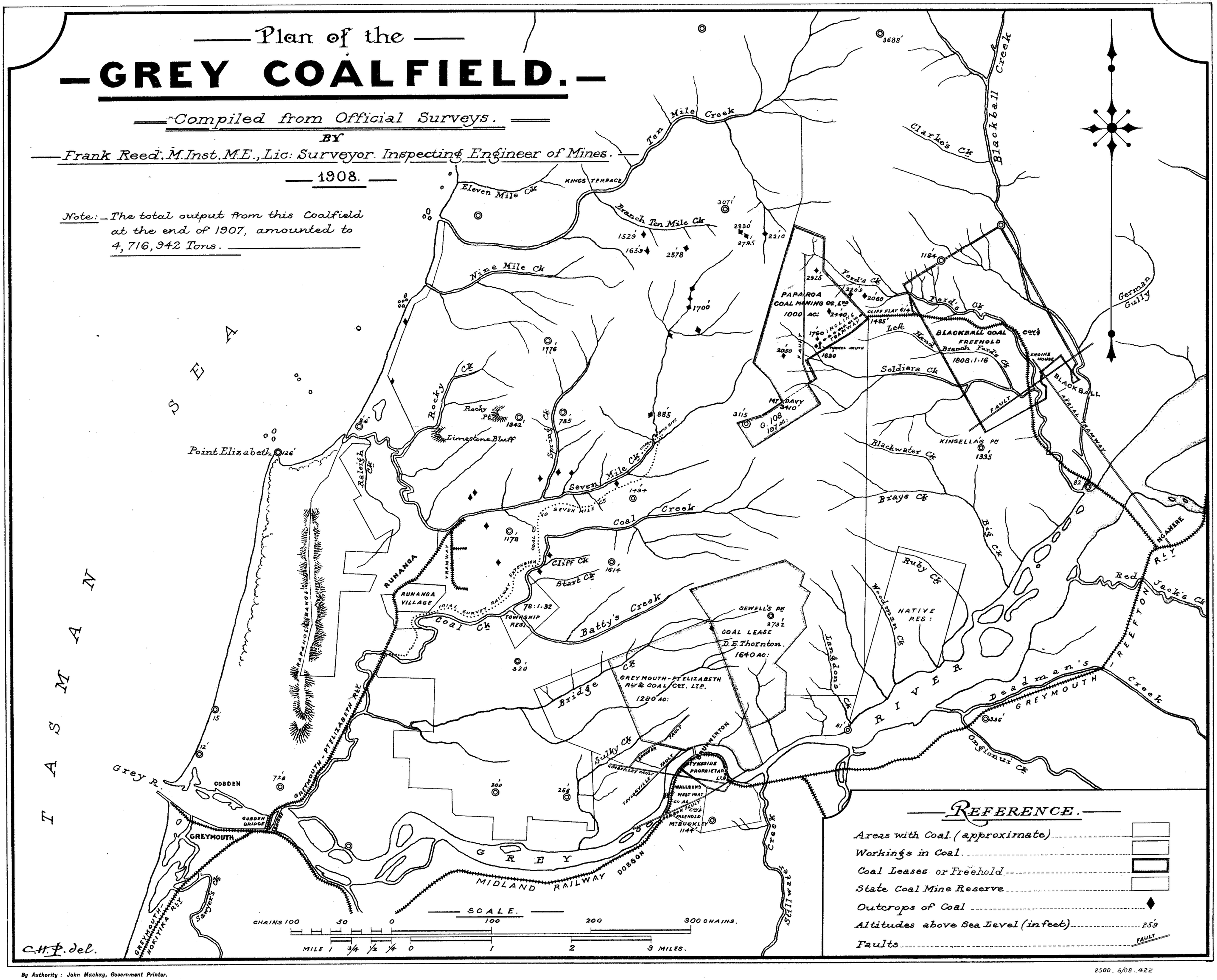
Compiled from Official Surveys.

BY

Frank Reed, M.Inst.M.E., Lic: Surveyor. Inspecting Engineer of Mines.

1908.

Note:—The total output from this Coalfield at the end of 1907, amounted to 4,716,942 Tons.



REFERENCE.

- Areas with Coal. (approximate)
- Workings in Coal.
- Coal Leases or Freehold
- State Coal Mine Reserve
- Outcrops of Coal
- Altitudes above Sea Level (in feet) — 259
- Faults — FAULT

C.H.P. del.

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by a double inlet Capell fan, calculated to maintain a safe working-capacity of 100,000 cubic feet per minute; but, although the present authorised engine speed of fifty to fifty-two strokes per minute produces a volume of 60,000 cubic feet of air per minute to supply a hundred men and youths employed, complaints have been of frequent occurrence from our socialist friends; even the mean velocity in the return airway (9 ft. by 6 ft.) exceeds 1,000 ft. per minute. Systematic set timbering is specially carried out in every working bord, the pillars are extracted directly they are made, and the exhausted ground effectively sealed off. Reports and other provisions of the Act strictly enforced.

Tyneside Proprietary Company (R. Alison, mining manager).—As the trade demands continue to show no decrease on the resources of this colliery, double shifting was necessary throughout the whole year, the output showing a satisfactory increase of 13,315 tons. Regarding mining operations, coal for commercial purposes has been taken exclusively from the upper levels, which are now extended east and west from the main dip haulage to their respective boundaries. Thus, the output is wholly obtained from the extraction of pillars. Fortunately, the difficulty of pumping has been largely set aside by the installation of a double-acting 12 in. diameter plunger pump, placed directly on the line of the main haulage road, shortly below the junction of the upped levels; but the normal water level at starting, however, has not been reduced, hence the life of the mining operations is easily within visible distance of termination. The inrush of water through the broken overlying strata is not seriously affected by rainfall. Surface equipments in screening, sorting, and hauling are well maintained, whilst strict observance is made by the workmen in their monthly inspections of the mine. Reports to date. Seven inspections made.

Brunner Mine (R. Alison, mine-manager).—With respect to the troubled character of the St. Kilda section of the lease, anticipations have been fully met. The field is purely a geological puzzle, interlaced with all sorts of peculiar faulting, with singular and intricate positions, positively unsuited to economic mining. The working faces afford employment to six miners, who supply coal for the manufacture of coke, which, according to report, maintains its original efficiency for iron smelting. The output of fireclay goods for the year 1907 was 1,405 tons.

Thornton's Coal-lease, South Brunner (Arthur P. Harper, solicitor, Greymouth, attorney).—Active prospecting has been carried on during the year, with the result that the coalfield so far prospected is considered to give favourable promise, the owners being confident that the existence of the Paparoa coal-seams are within reasonable and economic depths. Relative to the geological features and probable coal-bearing capacities of the coalfield, the lease was examined by a British expert, but the outcome of his report remains unpublished. Surveys of the projected routes of railway and tram haulages have been completed, together with other preliminary works. On an average, eight men have been generally employed throughout the year.

Paparoa Coal-mining Company, Limited (J. T. Watson, mine-manager).—(12/11/1907): In connection with the development of this extensive property, the various works have been vigorously pushed throughout the year. The extensive employment of labour in railway construction, tunnelling, and other important work is evidence of the absolute confidence in the future possibilities of the coalfield. Referring to the rock-drivings now in progress, one of the principal factors worthy of note is the provision made to facilitate haulage and ventilation, as these tunnels have each finished dimensions of 11 ft. by 7 ft. in the clear of all timbering over the completed tram-line. The lower incline rising from the proposed bin-site, on an average gradient of 1 in 3, encounters 20 chains of rock tunnelling, followed by the erection of several chains of bridging before a landing is effected with the delivery from No. 2 tunnel. This 20-chain tunnel is being driven from both ends, and is expected to hole shortly. The distances driven are 480 ft. and 231 ft. respectively. The No. 2 rock tunnel, rising on a gradient of 1 in 11, will intersect Nos. 1 and 2 coal-seams, and provide direct connection between the Ford's Creek and Soldier's Creek sides of the range, at a computed length of 52 chains. (28/1/1908): Rock-drills, actuated by compressed air, were introduced on the lower end of No. 2 tunnel, and preparatory work was in active operation for a similar instalation on the Soldier's Creek side of the property. The respective drivings on this tunnel from both ends are 363 ft. and 297 ft. The fan drift, 6 ft. by 6 ft., is in course of construction. Meantime, ventilation has been efficiently promoted by steam and water blast. The main ventilation will be induced by Sirocco fans of high power. Reports kept to date, and other provisions of the Act strictly observed.

Coal-miners' Accident Relief Fund, administered under the Coal-mines Act.

Where the funds are managed under medical associations, the following table shows the contributions paid by the various coal companies, the balances credited at the Post-Office Savings-Bank, the amounts expended on accident allowance, and the increase or decrease on fund for the year 1907:—

Colliery.	Contributions and Interest.	Balance in Savings-Bank.	Accident Allowance.	Increase	Decrease.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Denniston ...	857 17 5	5,232 7 0	583 9 10	134 2 3	...
Millerton	693 14 9	2,104 18 11	708 15 9	...	15 14 9
Blackball	189 7 11	966 3 5	162 8 9	26 19 2	...
Brunner and Tyneside ...	195 6 3	1,002 12 2	202 14 2	...	8 4 7
Point Elizabeth ...	217 14 11	196 18 3	20 16 8	196 18 3	...
Totals ...	2,154 1 3	9,502 19 9	1,678 5 2	334 0 4	...

Millerton Colliery Medical Association.—In accordance with Regulation 15, Paragraph (*a*), under "The Coal-mines Act, 1905," the trustees paid during the year, in excess of the claims for minor accidents, the sum of £150 on behalf of three claims for permanent disablement, and £25 for one death by accident.

The Brunner Mine Accident Relief Fund.—At the request of the trustees of this association, the Hon. Minister of Mines granted that the considerate allowance of £130 be withdrawn from the accumulated funds, in full satisfaction of all claims for funeral expenses, due to the death-rate occasioned by the late Brunner Mine accident, 1896.

Accidents.

Of the number of accidents reported as coming within the meaning of section 60 of "The Coal-mines Act, 1905," five were fatal and seven non-fatal. Of the persons killed, four were underground at or near the working-face, and the other, a screen attendant (youth), caught by a travelling belt.

Fatal.

Point Elizabeth Colliery.—(23/5/1907): Stanley Whitesmith, screen boy, while working in the bins, was killed by the travelling belt.

Millerton Colliery.—(7/6/1907): John Leece, miner, killed by fall of roof-coal, caused by truck knocking out prop.

Ironbridge Mine, Denniston Collieries.—(30/9/1907): John Kirkin, trucker, killed by fall of roof-coal and stone, caused by collapse of the timbering over a main landing.

Ironbridge Mine, Denniston Collieries.—(30/10/1907): Victor Johnson, miner, sustained fatal injuries by fall of stone from roof while setting prop, from which he died on the 2nd November, 1907.

Paparoa Colliery.—(7/11/1907): Martin Harrobin, underviewer, while attempting to clear himself from fall of soft side coal and fireclay, fractured his skull against a lath previously nailed to the main timbers. Death instantaneous.

Non-fatal.

Millerton Colliery.—(8/1/1907): Joseph Tiplady, horse-driver, sustained injury to groin by kick from horse.

Coalbrookdale Mine, Denniston Collieries.—(4/5/1907): Charles Morrisey, miner, sustained fracture of shin-bone of right leg by fall of coal and stone in working-face.

Ironbridge Mine, Denniston Collieries.—(10/5/1907): James McVicar, miner, sustained scalp-wound by fall of stone in face of stone drive.

Tyneside Colliery.—(29/5/1907): James Veale, miner, sustained scalp injury, and George Griffiths, miner, slight scalp wound and injury to left big toe by fall of roof in their working-face.

Point Elizabeth Colliery.—(1/7/1907): Thomas Jackson, miner, sustained injury near left breast by fall of coal from face, caused by a "bump."

Ironbridge Mine, Denniston Collieries.—(6/9/1907): J. Ballinger, miner, whilst taking down coal in the face, sustained injuries to the heel, which necessitated amputation of the foot.

Puponga Colliery.—(12/12/1907): James Pearce, miner, sustained severe burns by the ignition of 1¼ lb. of compressed powder, which he carried openly.

General Remarks.

This is the first year in which the record output of 1,000,000 tons has been raised from the coal-mines of this district. The gross tonnage was 1,052,022 tons, an increase of 89,107 tons on the previous year.

Mining operations generally have been carried on without interruption due to bad trade or to labour disputes, with the exception of some misunderstanding which arose between the owners and workmen on the Denniston field, relative to the interpretation of the eight-hour bank-to-bank clause of the Arbitration award *versus* section 37 of "The Coal-mines Act, 1905." Fortunately, however, an amicable settlement was forthwith established, without loss of work.

Persons employed.—The total number of persons employed in and about mines under the Coal-mines Act was 2,158, being an increase of 114 on the previous year. Of these, 1,467 were employed below ground and 691 above ground. Omitting number of persons employed in development of new leases, the coal raised per person actually employed below ground was 769,577 tons, and per person employed above and below ground, 562,578 tons.

Accidents.—The death-rates from accidents per thousand persons employed during the year were—(*a*) Below ground, 2·726; and (*b*) above ground, 1·447. Per 1,000,000 tons raised, the death-rate was 4·752, as against 2·077 in 1906.

Foreign Trade.

Westport Coal Company.—The total tonnage shipped directly from Westport to ports outside the Dominion during the year 1907 was 38,447 tons, this being an increase of 5,202 tons as compared with 33,245 tons for the year 1906, and in comparison with the year 1905 an increase of 3,678 tons.

I have, &c.,

R. Tennent,

Inspector of Mines.

Mr. E. R. GREEN, Inspector of Mines, Dunedin, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Dunedin, 31st March, 1907.

In compliance with the requirements of section 75 of "The Coal-mines Act, 1905," I have the honour to submit herewith the following report on the coal-mines in the Southern District for the year ending 31st December, 1907:—

CANTERBURY.

Broken River Coalfield.—(19/4/1907): The area held under lease by Messrs. Cloudesley and others is not yet being worked. It is claimed that the coal cannot be worked to advantage until the Midland Railway bridge across Sloven's Creek is completed. The seams outcrop in several places, and at one point consists of 13 ft. brown coal overlying 1 ft. in thickness of an anthracite or altered brown coal.

Sloven's Creek Coalfield, Midland Railway.—(19/4/1907): The coal in this field is locked up at present, awaiting the completion of the railway bridge across Sloven's Creek.

Springfield Colliery, Springfield (James Taylor, permit).—(4/1/1907): Taylor was working alone, getting fireclay and a small quantity of coal.

Springfield Fireclay Works, Springfield (Christchurch Gas, Coal, and Coke Company, owners, Christchurch; Luke Greening, mine-manager, permit).—(18/4/1907): The above company purchased this mine from W. J. Cloudesley. Fireclay of good quality exists, and this will be the main object of future mining. A small coal-seam also exists. The clays are mined and sent to the works at Christchurch. The mine is not yet properly opened out, but a second shaft has been sunk for ventilation and egress. Main drive well timbered. Suitable timber, chiefly black birch, for use in the mine is procured from Kowhai Bush. A small pump, capable of delivering 3,000 gallons per hour, keeps the mine dry. Rules posted. Report-book to be kept.

Homebush Colliery, Glentunnel (J. C. Campbell, mine-manager; Dean's trustees, owners).—(13/4/1907): Mine idle on this date. The line of light railway is being laid down. The locomotive and material are now on their way from England. (17/9/1907): Mine workings and roadways in good order. Timber well used and plentiful supply available. In the rise, or pillar section, the lower stoops are now being brought out. Inward work in the engine seam has been stopped at the Sandstone Gully, and preparations are being made to return with the pillars. The dip section has been opened out by levels and headings. Pillars are now being extracted. Generally the ventilation is efficient: volume of air at top of furnace drift, 7,920 cubic feet. Safety-lamp inspection made. Rules posted. Report-book and plans of sections kept. The mine output is now conveyed to the railway siding by means of a light locomotive. The distance is a mile and a quarter, and the locomotive is capable of handling 200 tons daily. The gauge of the line is 2 ft. 6 in. (21/11/1907): Successful drawing of rise pillars continues, work being now out by the old Drum heading.

No. 2, or Dip district.—False roof troublesome, but timber in ample quantity well set and attended to. Return air to ventilating furnace, 10,500 cubic feet per minute.

St. Helen's Colliery, Whitecliffs (H. Levick, permit).—(21/11/1907): Dip drive 100 yards to face in the 6 ft. seam, and levels driven north to fault and south to outcrop. Cross-measures drive is in to the 4 ft. seam, in which levels are being driven north and south. All work is narrow to the boundaries, with a view to future pillar extraction.

Te Moana Coal-mine, Geraldine (Crowe Bros., lessees).—A coal lease having been issued, a small quantity of coal was won towards the end of the year.

Mount Somers Coal Company, Mount Somers (Andrew Thompson, mine-manager; George Nell, secretary).—(18/12/1907): The mine-workings and roadways are in good order. Work is being continued to the dip, in which the coal is turning out well. The slack coal is delivered to the local lime-kilns. Loose blasting-powder is being used, and several cannisters were required. Ventilation good. Timber well used. Rules posted. Report-book and plan kept. Six men employed.

Woolshed Creek Colliery, Mount Somers (Thomas Harris, permit, mine-manager; W. T. Doak, secretary).—(18/12/1907): The mine was idle on this date, pending completion of future working policy and appointment of new mine-manager. Four men had hitherto been at work on tribute. Operations appear to be well conducted. Extraction of pillars may not recover a large percentage of coal, owing to absence of solid measures and the proximity of gravel to the coal-seam. Timber well used. Rules posted. Report-book and plan kept.

Orr's Coal-lease, Mount Somers (A. A. Orr, lessee, Ashburton).—(18/12/1907): Development has been kept back until completion of new branch tram-line up Chapman's Creek. The line, which will serve Orr's, the Mount Somers, and the Woolshed Creek (late McClimont's) areas, is now being pushed on.

NORTH OTAGO.

Shag Point Colliery, Shag Point (William Hunt, permit).—360 tons of coal from small seams left behind by the former company of leaseholders.

Allandale Colliery, Shag Point (C. H. Westfield, mine-manager; W. Everest, secretary, Shag Point).—(30/4/1907): Mine in good order. Ventilation good, and timbering efficient. Work to north-easterly consists of coming homeward on pillars in Klondyke region. New 100-horse power generator driving motors for main dip and level haulage, lighting purposes, and also dip pumping. (10/9/1907): In the north or Siberian level four men are engaged drawing pillars. The seam is low, and the floor swelling rapidly, prevents creep taking place over the pillared ground. In the No. 1 north level section, off the north level dip, where the seams are split, the bottom seam is now being worked. The working-places in the dip section are in good order.

Ventilation good. A new dip near the main incline has been driven 70 yards in No. 2 6 ft. seam, and levels are being broken off. Haulage from this dip is effected by a 30-horse power electro-motor. Ventilation throughout the mine was good. Safety-lamp inspection made. Rules posted. Report-books and plan kept.

SOUTH OTAGO.

Fernhill Coal Company, Abbotsford (James Gray, lessee and manager).—(5/12/1907): Air at intake 10,500 cubic feet per minute. Mine in good order, and ventilation adequate. Moisture is apparent on the roof and sides of the coal-drives underlying the Silverstream water-race, due, the lessee states, to percolation from the water-race. The workings are taken narrow under the race area, and are properly secured where necessary. The excellent deposit of building-sand on this property continues to be extensively worked for supply to Dunedin and surrounding districts.

Freeman's Coal Company, Abbotsford (J. Sneddon, manager).—(30/5/1907): Mine and ventilation in fair condition throughout. The breast of north-going places are in solid; centre dip workings are being pillared and robbed to the barrier to dip. (29/10/1907): Air warm in two pillaring places, from which the men were withdrawn and accommodated elsewhere. With these exceptions, ventilation generally well conducted by air-stoppings and brattice as required. (5/12/1907): Preparations well in hand for utilisation of the new upcast air-shaft, whereby ventilation of the adjoining workings in solid will be confined to this section of work, and separated from the pillaring area, which latter is to be ventilated as formerly by means of No. 1 furnace shaft. (Subsequent to this date the air was changed with highly satisfactory results.) Coal-winning is carried out in a safe manner, an ample supply of timber being kept and used as considered necessary. Spontaneous fires on the fringe of the waste continue to be dealt with as occasions require—that is to say, the fires are attacked in their incipient stages and filled away or blocked off as may be most expedient. Report-books and plan to date.

Green Island Colliery, Green Island (T. Barclay, jun., manager; Green Island Minerals Company, owners).—(6/12/1907): New dip drive is 135 ft. to the face, partly driven under old workings of small extent. Water draining off gradually, and no danger is to be apprehended from that cause in the meantime. As work advances, however, water standage in the old shaft workings will require to be guarded against.

Jubilee Colliery, Saddle Hill (P. Campbell, mine-manager; Jubilee Coal Company, owners).—(10/7/1907): The mine-workings and roadways are in good order. Working is now being prosecuted to eastern portion of lease. Ventilation good all round the faces. Air-current at mine-mouth, 6,792 cubic feet per minute. Report-book in order. Plan kept. Seventeen men employed. (6/12/1907): Coal-seam strong, and roof and sides in safe condition. Pillaring to the outcrop of the north-easterly portion of the mine is being safely conducted.

Burnwell Colliery (including Glenochiel), Saddle Hill (Adam Harris, owner and manager).—(12/7/1907): The workings have been carried down in a solid rib, skirted on either side by old working. The mine is now being extended into solid. Working-faces and roadways in good order. The present return is through fallen ground, and the shaft-connections should be made with the new workings for a fresh ventilating-course. Report-book in order. Rules posted. Eight men employed. (6/12/1907): The air in the dip working-places was impregnated with black damp, a place having been pricked through to old workings. A new air-drift to a shaft conveniently situated is to be commenced forthwith, to provide increased ventilation and improved second outlet.

Saddle Hill Colliery No. 1, Saddle Hill (Christie Bros., owners; W. W. Ogilvie, manager).—(12/7/1907): Work is now confined to lower dip workings. Working-faces and roadways in good working-order. Excellent ventilation is maintained by two separate systems, one of which circulates through the upper workings standing on pillars. The furnace at upcast shaft was in good order, but the shaft-bottom required to be widened, being somewhat contracted by the furnace as built. Report-book up to date. Rules posted. (6/12/1907): Ventilation excellent. Condition of roadways and working-places safe and strong.

Saddle Hill Colliery No. 2, Saddle Hill (Christie Bros., owners; Robert Hill, manager).—(10/7/1907): Extraction of pillars in No. 1 district is being successfully continued. No. 2 district is being developed. A small fault was found to affect the coal on either side for half a chain. (16/10/1907): No. 1 district is exhausted and closed, and work is now concentrated in No. 2 district. Air dull and stale in two workmen's places. The drive to new furnace-shaft is, however, nearly through, when great improvement should occur. (6/12/1907): Air at intake, 8,000 cubic feet per minute. New brick furnace is acting well, and ventilation of working-places is now efficient.

Mosgiel Colliery, Mosgiel.—Owing to the troubled nature of the area by faulting, work has been suspended indefinitely.

Lauriston Colliery, Duncan Settlement, Brighton Road (J. R. Walker, owner and manager).—(11/7/1907): The lower portion of the dip workings are flooded. The lessee states that this is due to some road-formation interfering with drainage outfall. Work is now going on in the rise section of the mine. Ventilation good.

McColl's Coal-pit, Duncan Settlement, Brighton Road (D. L. McColl).—(11/7/1907): This pit maintains a limited output. Ventilation good. Seam low and working drives narrow.

Drummuir Coal-mine, Brighton (A. Louden).—The seam proved thin, and is not now worked.

Real Mackay Colliery, Milton (Lovell's Flat Coal Company, owners; James Carruthers, manager).—(10/5/1907): Operations are being carried on in the 7 ft. seam. All work in the mine is confined to bringing back pillars. This work is being well carried on, and a good extraction is being made. Timber as required is well used. Ventilation good, being maintained by

several apertures at different points in the mine. Prospecting is being carried on with a view to locating further seams in the property. Report-books to date. Rules posted. (11/9/1907): In No. 1 section six men were employed on pillar work. Timber well used. Operations have been discontinued in the swamp section until a new drive has been put down to the dip of present workings. The last of the pillars are now being taken from the old mine. Mine-workings in good order. Ventilation good. Safety-lamp inspection made.

Glenledi Coal-mine, Milton (N. McGilp, owner).—(10/5/1907): Since the advent of the Bruce and Real Mackay Coal Companies in this district trade has fallen off at several small mines. A few loads are taken away from time to time from this pit.

Waronui Colliery, Milton (Bruce Railway and Coal Company, owners; Thomas Barclay, mine-manager).—(10/5/1907): The working-faces and roadways were in good order. All work is in the solid coal and in the dip section. The present haulage is lengthy and costly. It is now proposed to put in a dip drive, 1 in 5, to strike the coal to the dip of present workings. This alteration would reduce haulage and pumping cost, but would necessitate rearrangement of surface plant and railway system. The ventilation was fair, being maintained by furnace in upcast shaft. The seam maintains its average thickness of 17 ft. throughout, though the presence of pug seams causes considerable trouble. Rules posted. Report-book to date. About eighteen men employed. (11/9/1907): The working-faces are progressing further from the upcast shaft, and, in the absence of mechanical ventilation, it is now evident that a new air-shaft will be required. A proportionately new travelling-way or second return is being made. Safety-lamp inspection made prior to men commencing work.

Taratu Colliery, Kaitangata (Taratu Railway and Coal Company, owners; G. R. Cheeseman, general manager, Dunedin; T. Shore, mine-manager).—(11/1/1907): Mine-workings in good order. The dip workings are turning out well. The coal is hauled to the dip-head, and the drainage effected by an oil-engine for power. From the dip-head the coal is hauled to the screens by ponies. (14/9/1907): Examined the No. 1 mine-workings, and found them in good working-order. Ventilation good. Timber used where necessary. Levels are being driven off from the shaft-bottom, but progress is hindered by a fault on the west side. Efforts are being made to connect through to the No. 1 shaft for ventilation, but it will be necessary to pierce the fault-line. Safety-lamp inspection made. Approved list of signals in use. (16/12/1907): Recent mine-workings abandoned, consequent upon the new or No. 2 shaft sunk 200 ft. in depth to coal-seam 14 ft. Dimensions of shaft, 13 ft. by 5 ft., three compartments. A main fault, strike north-west and south-east, was met with in the 5 chains to drive to upcast air-shaft, and crossing fault, running conglomerate struck was giving trouble. Safety-cages by Roberts and Son, Bendigo. Guibal fan, 5 ft. diameter. Air, 7,500 cubic feet, at 200 revolutions per minute. New surface plant and arrangements on pit-bank, with screen and elevator for nuts and peas. Examinations by safety-lamp made regularly; small feeders of gas occasionally reported, but no accumulations of gas have as yet been disclosed by examination.

Kaitangata Colliery, Kaitangata (New Zealand Coal and Oil Company, owners; O. G. Lockhart, secretary, Dunedin; W. Carson, mine-manager).—Several most important events took place during the operations of the year. In the first place, the value of the new upcast air-shaft was amply demonstrated by increased and improved ventilation of the mine, and, as a secondary consideration, by reason of the piercing of the strata, thereby liberating pent up gases from the measures overlying the coal-seam, resulting in the gas drainage of an area of coal-bearing land probably larger in extent than had previously been exposed to view in the history of the colliery. Considerable difficulty was experienced in making the necessary connections for ventilation and haulage when developing the main extension area, owing to presence of fire-damp in the rise places, notwithstanding close bratticing, especially in the neighbourhood of No. 7 fault. Upon the connections being made, however, the gas-pressure gradually decreased, and the workings assumed normal conditions. An extraordinary "overlay" exists at this fault, where the unusual occurrence may be seen of the coal-seam, 30 ft. in thickness, overlaid in the V of the fault by the seam a similar thickness, having a band between of about 30 ft. of clays and conglomerate. The positions in which these seams were found in relation to the main cross-measures, easterly extension drive, proved most favourable for haulage purposes, and flattening, as the seams are, to seaward, should prove encouraging to the owners, following on extraordinary expenditure in restoration of the mine. The special reinforced brick and steel fire stoppings on the main road have stood the test of time, and to all appearances they are quite capable of isolating the older workings by acting as air-tight stoppings, and preventing exudation of deleterious gases into the ventilating system of the new mine. Apart from the development work on the main easterly extension, coal-output has been principally maintained from the south level extension, including No. 19 dip district and Nos. 3 and 4 headings south, which have been extensively robbed by extraction of pillar and head coal. No. 19 dip seam proved disappointing, by reason of its faulted and troubled character. The only serious accident of the year happened to James Fibbes, roadsman, he sustaining severe injury to the lower spinal joint through being struck by a runaway rake of boxes on the main haulage road. Extreme care has been taken in the management and handling of safety-lamps, which are in general use throughout the mine. The lamp station is continued at the foot of the main incline, whence all the workmen are passed in to their work. Report-books and plans to date. Rules posted, and requirements of the Act generally well observed. (17/12/1907): An average circulation of 30,000 cubic feet of air per minute is maintained by exhaust fan 9 ft. in diameter, electrically driven at 180 revolutions, W.G. $\frac{6}{10}$ in. Twenty visits of inspection were made during the year.

Castle Hill Colliery, Kaitangata (New Zealand Coal and Oil Company, owners; W. Carson, mine-manager).—(23/7/1907): During the early part of the year this mine was heavily drawn upon for supplies, on account of the troubles at Kaitangata Mine.

North Extension: No. 7 dip was put down 105 ft. when a "roll" was struck. A level was started away, but owing to presence of gas and difficulty of ventilating the dip was stopped, and is now half full of water. Nos. 1 and 2 levels south are being pushed on, and it is intended to drive along the "roll" for ventilation of the dip workings. Gas was detectable on the roof at the face of No. 2 level. The return from this place was contracted. Elsewhere this section was clear of gas, the only working-faces being No. 2 level and end.

Jordan's Seam: This is an 11 ft. seam cut by a cross-measures drive, and lying behind the 25 ft. seam working stone cross-cut. There were six men in this section. Nos. 1 and 2 levels north were working. All clear to-day, although presence of gas sometimes detected at face of No. 1 level north. We traversed the faces of the headings, and the return by way of the 50 ft. shaft up into the 25 ft. seam section. Examined all the stoppings *en route*, and found all clear round the return. This is a long distance, and involves upkeep of a large number of stoppings mostly "log" built. We returned by way of the stone cross-cut to the main drive, and then by the north extension to No. 5 dip. There is only one pillar working in this dip, two men on bottom level and two on top. The roof is here very treacherous, owing to the presence of a "roll" which traverses the pillar. The roof falls close in to the face. In consequence of this it is a difficult matter to ventilate properly over and through the fallen ground behind the pillar. The pillar is being brought outwards. The bottom pair of men were in fairly good air, but on going to the top pair we found them dependant upon the air which filtered through the fallen ground. At my instance these men were removed, and will now be in the direct course of the air which will be on the faces.

Carriage Heading district: Stopped off on the level; all clear.

6 ft. seam: One man on stone-work.

North level and north level return: All stoppings clear on this course.

Air current: South side, 300, 6 by 5, 9,000; north-side, 250, 6 by 5, 7,500: total, 16,500, plus 5 per cent., 825: 17,325.

Record Reign Coal-mine, Kaitangata (John Irvine, manager).—(24/7/1907): A straight level drive from the hillside into the coal-seam, which appears to be about 10 ft. in thickness. No one about at the time of my visit.

Central Otago.

Coal Creek Collieries, Coal Creek Flat, Roxburgh (R. Pilling, jun., secretary, Lawrence; J. Barber, mine-manager).—(7/6/1907): Leasehold Mine: The new drive put in to meet the coal seam in the dip, and thus lessen the haulage distance and provide free drainage, did not prove successful. Disturbed and heavy ground was met with, and the plan was abandoned after a distance of 8 chains had been driven. Three men were employed taking up a new lift of bottom coal in the opencast, until means could be provided of mining further to the dip.

Freehold Mine: Owing to there being three coal-pits in this district, causing keen competition for a limited trade, only the best quality of coal is sent from the pits. A large proportion of the coal from the freehold section appears to be inferior to that in the leasehold, and for this reason the freehold section has not been worked during the year. The mine is kept open and in repair, and I found it in good order on my visit. Good natural ventilation is maintained. Rules posted. Plan and report-book kept up.

McPherson's Coal-pit, Coal Creek, Roxburgh (Mrs. M. McPherson, lessee; A. McPherson, manager).—(7/6/1907): Portion of the seam lying towards the main road exhibited signs of spontaneous ignition. Attention was given to this place, and a large amount of coal was won opencast. The lessee has hopes that the heated area has been cleared out. This pit, which continues to be worked opencast, is kept in good order, but the amount of refuse obtained from rubbish seams and soft coal is a serious drawback. The greater portion of the clay overburden is sluiced off with water. 4,024 tons of coal was mined during the year, and an average of six men were employed.

Craig's Perseverance Coal-mine, Coal Creek Flat, Roxburgh (James Craig, lessee; William S Craig, permit).—(7/6/1907): The new dip workings were in good order. A good current is maintained by natural conditions. The heated area continues to be stopped off. I found the stoppings in good order. Safety-lamp inspection made. Six men are employed. Rules posted. Report-book up to date. Plan kept.

McQueenville Colliery, Alexandra (S. T. Lett, lessee).—(9/8/1907): The lessee having applied for abandonment, shafts have been filled up, and edges of plumps to surface trimmed as settlement of filled-in material proceeds. Above is in accordance with the terms of the lease.

Alexandra Coal-mine, Alexandra (Mathias Bros. and Co., lessees; G. F. Turner, mine-manager).—(27/9/1907): This privately owned mine continues to be worked by the shareholders, to supply dredging and household requirements. Generally the mine is in good working-order. Timber is used as required. The condition of the seam renders narrow working necessary, and for this reason the ventilation requires careful attention. On this visit the air was dull at several faces, but this was remedied by readjustment of the air-brattice. Only one man was employed in the lower workings, driving a new dip. The main work was being continued to the rise. Safety-lamp inspection continues to be made before the men descend to work. Plan and report-book kept. Rules posted 4,600 tons of coal was raised, and an average of eleven men employed above and below ground.

Alexandra Coal Company (Molyneux Colliery), Alexandra (L. Ryan, secretary; James Pollock, mine-manager).—(8/2/1907): Mine-workings and roadways in good order. Bore-holes are kept going in roof and face of advancing places. The top of the upcast chamber of the shaft has been heightened 42 ft., and this has resulted in a marked improvement in the ventilation.

The shaft restoration and repairs have been completed, with the result that full advantage is taken of the inside diameter of the tubing. The haulage compartment and the ladder-way have thus been increased in size. The erection of brick arches at the foot of the shaft will render it immune from destruction by fire. Nine men on shift. (9/8/1907): Owing to the bottom rising in the far-in rise workings, and threatening to close the roads, it is proposed to split several of the pillars in this section. Arrangements are made to carry the drainage from the riverward rise workings direct to the sump at shaft-bottom. This will afford the dip pump a reserve of capacity in the event of any increased drainage. Mine-workings in good order. Ventilation good.

Cambrian's Coal-pit, Cambrian's (Catherine Dungey, lessee).—One man works in this opencast pit, which is worked to supply a limited local trade.

Jones's Coal-pit, Cambrian's (Robert Jones, manager).—This pit lay idle for many years, and has recently been reopened.

Welshman's Gully Coal-pit, Cambrian's (James McGuckin, lessee).—Owing to the steep angle of dip, and the heavy drainage, combined with the lack of suitable appliances, the lessee continues to sluice off the overburden and win the coal opencast. Two men employed.

Blackstone Hill Coal-pit, Blackstone Hill (James Armitage, lessee).—(16/7/1907): Prospecting operations having failed to reveal a further supply of coal on the lease, the mine has been closed down.

Price's Coal-pit, Blackstone Hill (D. McKnight, lessee).—The output from this private pit is required for domestic and farming purposes.

St. Bathan's Coal-pit, St. Bathan's (James Enright, lessee).—(16/7/1907): Opencast pit. Owing to the depth of the working face it is necessary to keep the overburden well stripped back. Two men employed.

Rough Ridge Coal-pit, Idaburn (Mr. M. Beck, lessee; William Beck, manager).—Three men find employment in this opencast pit, from which 981 tons were produced during the year. Care requires to be exercised in the working of this pit, owing to the depth of the working face

McLean's Coal-pit, Idaburn (Mrs. M. Beck, lessee).—This lease is not being worked, as the present working pits are more than able to supply the demand. Owing to the importation of superior fuel by rail, the local annual output is diminishing.

Idaburn Coal-pit, Idaburn (J. White, lessee).—This pit maintained a steady output during the year. 1,007 tons was produced, and the average number of men employed was two. The system of work is opencast.

Donaldson Bros. Mine, Mount Highlay.—(21/3/1907): This pit has been opened on Matheson's Run, to provide fuel for power purposes in connection with the crushing plant at the New Zealand Gold and Tungsten Mine, Mount Highlay. The coal is won opencast.

Clyde Collieries Company, Clyde (A. E. Ackroyd, secretary, Dunedin; George Smith, manager).—(12/4/1907): An upthrow fault, strike north-east and south-west, having a displacement of 17 ft., has been struck on the southern boundary of the Dairy Creek portion of the lease. Coal considerably disturbed, and dip of seam altering, so that the main drive is being gradually swung around in a northerly direction. A suitable part of No. 3 seam was selected for withdrawal of an area of pillars. (13/6/1907): Work progressing favourably. (8/8/1907): Good results have been obtained from pillaring and robbing to date. I instructed the mine-manager to take necessary precautions against creep and spontaneous fires. (15/11/1907): Working faces and roadways in good order. Ventilation good. A portion of the old workings became heated, and was satisfactorily stopped off. Safety-lamp inspection made. The extreme dip workings were stopped for some time pending arrangements being made for the installation of a steam-pump, and during that time a few pillars were extracted from the fault line. The total output for the year from the Vincent and Dairy Creek sections was 3,611 tons. Rules posted. Plan and report-books kept. Nine men employed.

Fraser River Coal-mine, Shepherd's Flat, Clyde.—Arrangements are being made to reopen this mine to supply the Loch Lomond dredge, which is about to resume operations.

Cardrona Colliery, Cardrona (R. McDougall, lessee).—This mountain-pit has been worked on the usual lines during the year. Owing to the increasing depth of the open cut from which the coal is being mined, greater difficulty is being experienced in dealing with the overburden from the sides. 1,566 tons of coal was raised during the year. Five men employed during the summer season.

Gibbston Coal Company, Gibbston Saddle (Duncan and Scheib, lessees; John Duncan, manager).—18/6/1907): Owing to the removal of all dredges from this district, the output from this mine is now only required to supply a limited district trade for household and farming purposes. Mine-workings in good order. Rules posted. Plan and report-book kept. Four men employed.

Cromwell and Bannockburn Collieries Company, Bannockburn (T. K. Harty, secretary, Dunedin; A. S. Gillanders, manager).—(29/4/1907): Kawarau Mine: Work in this mine at present consists in driving levels southwards, and making the necessary cut-throughs for ventilation. In the upper workings the floor is heaving badly, making maintenance of roadway difficult through these workings. The main dip and the lower workings are in good order. Further working of this seam to the dip will not be prosecuted from the frontage by means of dip workings. The dip has been driven 897 ft. through the seam from the surface. Owing to the amount of ground opened out, it is considered that, with the haulage and pumping required, further mining of the coal to the dip would be best accomplished from a new dip at the back of the present workings. This, however, is not a matter for the present or near future. The ventilation is good throughout the mine. Timber well used. Fresh copy of general rules and of special rules required. Plan and report-book kept. Seven men employed. (28/9/1907): Mine-workings in good order. Arrangements are being made to improve the ventilation, and provide a new second outlet. A

few pillars are being extracted in the extreme dip section, and the work is being well carried out. Materials for the erection of same to block off this section are kept in readiness. On the south side the working faces are all in the solid coal. (28/11/1907): South-going places from dip drive are advancing in best coal since Pryde's Kawarau Pit. Going westerly, coal thinning to 10 ft., and pillars are now being drawn. Air good. Mine and plant in good order. Safety-lamp examinations duly made, but no trace of fire-damp has been discovered.

Excelsior Mine (29/4/1907): Operations in this mine are confined solely to taking out pillars. Timber well used. Ventilation fair throughout the mine. The bottom level requires to be timbered in several lengths. Report-book up to date. Six men employed.

Wilson's Mine (29/4/1907): Two men are employed in this mine extracting pillars for the supply of coal to the Lady Ranfurly dredge. Ventilation good. Timber well used.

Cairnmuir Coal Company, Bannockburn (John Hodson, mine-manager).—(30/4/1907 and 28/9/1907): The old dip was repaired, and the winding and pumping plant was shifted from the shaft to the dip-head. This arrangement is more satisfactory. In consequence of the extension of the dip, and the opening out of fresh levels, the pumping and hauling requirements now exceed the capacity of the plant in use. A dredge boiler, having a pressure of 140 lb. to the square inch, has been purchased from the owner of the Upper Clutha dredge at Luggate, and will be transferred to the mine.

Rise Section: Two men engaged taking out pillars. Owing to the steepness of the seam the extraction is not complete, small stumps being left to keep back waste. Timber used where necessary.

Dip Section: Work consists in driving No. 2 level through the fault, and in further opening out levels from the dip extension. The coal in this section maintains a good quality and thickness. Good ventilation is maintained throughout the dip and two shafts. Ladders required in upcast shaft. Copies of the general and special rules posted at the mine-mouth. Plan and report-book up to date. Seven men employed. (28/11/1907): Workings in good order. Air good. Reports kept, and safety-lamp examinations regularly made.

Ryder's Coal-pit, Nevis (Charles Scott, lessee, permit).—The overburden is sluiced off and the coal mined opencast. 601 tons was raised, principally for dredge requirements. Pit in good order. One man employed.

Ritchie's Coal-pit, Lower Nevis (Robert Ritchie, lessee).—Opencast pit. The output for the year was 1,161 tons, all for dredge requirements. The pit is in good working-order. Two men employed.

McCabe and Party's Application, Upper Nevis.—(11/2/1907): A considerable amount of prospecting by shafts and trenching was done in the valley of Whitton's Creek, adjoining James Ritchie's area. Traces of coal were found, but no workable coal was met with. It is evident that the proximity of the Upper Nevis fault line has disturbed the coal deposit considerably.

SOUTHLAND.

Pukerau Coal-pit, Pukerau (P. O'Hagan, permit).—No. 1 lease (10 acres): The lessee has continued to work this mine in the usual manner. The output amounted to 765 tons, for which three men were employed. The seam is thick and strong, and the mine generally is in good order. The output is handicapped by bad access and the proximity of the mine to the railway. Rules posted. Report-book and plan kept. No. 2 lease (5 acres): This area is not being worked at present.

Nelson's Coal-pit, Pukerau (J. H. Nelson, lessee).—The output from this mine is limited, and the mine is handicapped by want of suitable appliances. The seam is strong, and the mine-workings are generally in good order. One man employed.

Riverview Coal-pit, Gore (L. D. Nicol, owner).—This pit is situated on freehold land, and 20 tons was mined for private use and limited local requirements.

Whiterigg Colliery, East Gore (W. H. Paterson, owner; Robert Burgess, permit).—(24/4/1907): S. B. Paterson, the former owner, sold out to the present owners (W. H. Paterson and E. Jones) during the first half-year. The proprietors then purchased Heffernan's pit, adjoining, and combined the two trades. 2,831 tons was produced during the year. Explosives carefully stored and handled. Four men were employed. Rules posted. Report-book and plan kept.

Heffernan's Coal-pit, East Gore (Paterson and Jones, owners).—During the first half-year 537 tons was won from this mine, after which the property was purchased by Paterson and Jones, and the pit was closed down.

Rosedale Coal-pit, Waikaka Valley (A. Reinke, owner; A. Mutch, lessee).—(26/7/1907): Opencast pit. 336 tons was mined during the early part of the year, after which the lessee ceased operations, on account of the closing down of Graham and party's dredge.

Green's Coal-mine, Gore (Thomas Green, owner; J. Mason, mine-manager).—(29/5/1907): Improvements continue to be effected at this mine, and the working-faces and roadways are in good working-order. Ventilation good. Timber well used where necessary. Explosives carefully stored and handled. The mine-workings are examined with the safety-lamp prior to the men commencing work. Six men employed. Rules posted. Plan and report-book kept. (31/7/1907): Mine in good working-order. 7,147 tons was mined during the year.

Smyth's Coal-mine, Gore (Withers, Dickinson, and Co., owners).—(29/5/1907): The above company purchased this pit from J. Smyth. I instructed the new owners to enlarge the size of the pillars in future workings. A new air-shaft is also required in the western section. Mine-mouth requires to be timbered. Rules posted. Report-book kept. Magazine required. Four

men employed. (26/7/1907): William Greenhill, manager. The mine is now in good working-order.

Tait's Coal-pit, Bushy Park Estate, Croydon (James R. Tait and Co., owners; George Tweedie, permit).—Opencast pit. Seam, 23 ft. in thickness; stripping, 12 ft. The overburden is heavy, and opencast operations are to be discontinued and the coal won by mining.

Boornwell Coal-pit, East Chatton (G. P. Johnston, owner; James Stark, permit).—(2/4/1907); This mine is worked by a main level, and headings are driven off. The seam is thick and strong, and the mine is well conducted. Safety-lamp inspection made. Rules posted. Report-book and plan kept. Four men employed.

Pacey's Freehold Coal-pit, East Chatton (T. Maslin, lessee).—(2/4/1907): The seam is thick and strong, and operations are conducted on safe lines. Timber well used. The coal is mined for the supply of dredges in the Waikaka Valley. Magazine provided. Rules posted. Report-book kept. Four men employed.

East Chatton Coal-pit, East Chatton (Arthur Perkins, lessee).—(2/4/1907): This mine is worked by means of a level and short headings to the outcrop. The seam is strong, and the mine is worked in a safe manner. Two men employed. Plan kept. Rules posted.

Ford's Coal-pit, Chatton (P. Ford, sen., owner).—The pit was leased to Martin Gerkin, who has continued to work it throughout the year, in order to supply the Chatton Reserve dredge. Coal outcrops at several places on this farm.

Thorndale Coal-pit (late Lloyd's), Waikaka Valley (Thomas Highsted, owner).—(26/7/1907): This pit is situated on freehold property which has been purchased by Thomas Highsted, who is taking out a few tons of coal during the winter months.

Springvale Coal-pit, Waikaka Valley (J. P. McIntyre, owner, Gore; D. McColl, lessee).—(4/4/1907): This opencast pit is generally worked on safe and systematic lines. The coal is mined for dredge requirements. The overburden is taken off with plough and scoop. Two men employed.

Willowbank Coal-pit, Waikaka Valley (W. Paterson, owner; William Jones, permit).—(4/4/1907): Mine-workings and roadways in good order. Ventilation good. Safety-lamp inspection made. Rules posted. Plan and report-book kept. Six men employed.

Glenlee Coal-mine, Waikaka Valley (J .McGill, owner; D. T. McGill, permit).—(30/5/1907): A limited trade is supplied from this mine, which is generally in good working-order. Explosives carefully handled. Rules posted. One man employed.

McDonald's Coal-pit, Waikaka Valley (Adolph A. Edge, owner; S. P. Coulter, permit).—(30/5/1907): This pit is being worked on the usual good lines. Mine-workings in good order. Ventilation good. Rules posted. Magazine provided. Four men employed.

Radford's Coal-pit, Wendon Valley (G. Scott, farmer, owner).—This pit was worked for portion of the year by Radford and Moffit, and 371 tons of coal was mined. The mine is now being worked by S. Yeomans.

Mystery Flat Coal-seam, Waikaia.—Although, as stated in last year's report, the existence of coal-seams is known in the valley, the deposits are not likely to be required for many years, as the existing coal-pits fulfil all requirements.

Landslip Coal Company's Mine, Landslip, Waikaia (Landslip Coal Company, owners; W. E. C. Reid, secretary, Dunedin; Robert Brown, mine-manager).—(18/5/1907): This mine continues to be worked on the usual lines. The seam continues in thickness and strength to the dip and in the workings south. Timber well used. Ventilation good. Powder carefully used. Plan kept. Rules posted. Report-book in order. Ten men employed.

Kyle's Coal-mine (late Rear's), Landslip, Waikaia (James McLelland, mine-manager).—(18/5/1907): Development work in connection with this area is becoming restricted on all sides, and it is not deemed advisable to draw any pillars in the meantime to insure the stability of the haulage road and the air-shaft. A new area is being applied for, which could be worked from the present mine. The coal is broken, and requires narrow driving, with use of sufficient timber. Ventilation good. Rules posted. Plan kept. Report-book up to date. Seven men employed.

Monaghan's Coal-mine, Landslip, Waikaia.—(18/5/1907): Mine idle on this date. This property has been sold to Messrs. Bond Bros. The occurrence of a band of stone renders the sale of this coal difficult.

Rossvale Coal-mine, Landslip, Waikaia (Bond Bros. and Cain, lessees; A. Cain, permit).—(18/5/1907): The lessees have transferred their interest in this mine to Alexander Cain, who continues to work the mine for the supply of dredges. The mine is worked by means of headings driven off the drainage-level. This level has been opened up to 16 ft. in width, and I instructed the present holder to discontinue working wide. Timber well used. A second shaft for ventilation requires to be sunk, as the one in present use is unfavourably situated for present workings. Plan kept. Rules posted. Six men employed. Report-book kept. Two visits during the year.

Goldie's Shale-pit, Muddy Terrace, Waikaia.—(17/5/1907): This pit has been sold to Messrs. Junker and Knuckey, who are now engaged in reopening the mine-workings. Recent work in this pit consisted of opencast work, but this is now abandoned. Rules posted. Plan and report-book required. Three men employed. The Government Analyst having analysed a sample of shale from this pit reports, "This is a high-class shale, its yield of crude oil (30·1 per cent) being nearly double that obtained from Orepuki shale. If found in quantity it should prove of great commercial value."

Argyle Coal-pit, Upper Waikaia (J. and T. Baxter, lessees).—Since the opening and equipment of the collieries at Landslip with efficient appliances, this mine can only maintain a limited output. It is handicapped by bad roads and distance from the dredging-fields.

Mataura Coal-pit, Mataura (Mataura Collieries Company, Gore, owners; James A. Yule, secretary).—(2/8/1907): Mr. Sleeman continued to work this mine during the greater part of the

year on the same efficient lines as formerly. In October the property was sold to the Mataura Collieries Company, Gore. 8,145 tons of coal was mined during the year. Six men were employed. It is the intention of the new company to employ mechanical means of dealing with the overburden now removed by hand-labour.

Mataura Lignite-pit, Mataura (Beattie, Coster, and Co., owners; W. Coster, manager).—(2/8/1907): This pit continued in regular and systematic work during the year.

Waimumu Colliery, Waimumu (William Wallace, permit).—(2/8/1907): This mine has been worked opencast for many years, and has supplied the dredges in the Waimumu Valley. Owing to the task of stripping off the overburden becoming too heavy, a start was made to win out the coal by underground mining. The seam is fully 9 ft. in thickness, and lies nearly horizontal, presenting no difficulty in working, provided the workings are not taken too wide. Five men employed.

Ota Creek Coal-pits—Jas. E. Genge's freehold coal-pit.—(31/7/1907): Seam, 5 ft.; stripping, 10 ft. clay and gravel. No one about on this date.

Jas. E. Genge's leasehold coal-pit (31/7/1907): Thomas Lobb has a grazing right over the coal reserve, and James E. Genge takes coal from this reserve also. Seam, 5 ft.; stripping, 4 ft. No one about on this date.

Shields's Coal-pit (31/7/1907): This is freehold, and James E. Genge gets coal from this area also, and Shields carts the coal away. No one about on this date.

Wyndham Coal-pits—Ferry Road Coal-pit (M. Greene, owner).—(31/7/1907): This pit is situated on Greene's freehold land. The seam is 12 ft. in thickness, with a band of rubbish 1 ft. in thickness in the middle of the seam. The stripping is 8 ft. in depth, and consists of peat. The coal is hauled up by a horse, and the drainage is effected by a small steam plant and a Gould pump. Magazine provided. Two men employed.

Clarke's Coal-pit (Samuel Clarke, owner).—(31/7/1907): This pit is situated on Clarke's freehold land. The seam is 12 ft. in thickness, split by a band of rubbish. The stripping is 10 ft. in depth, and consists of clay and gravel. Drainage is effected by means of a centrifugal pump, actuated by a portable steam engine and boiler. Three men employed.

Thomas Genge's Coal-pit (31/7/1907): There are several coal reserves in this district vested in the Wyndham Town Board. A large quantity of coal was won in former years from these sections, known as Genge's and Munro's respectively. These have been practically worked out for some years. During the first half-year of 1907 Thomas Genge took a few tons out of the area known as Munro's. At the time of my visit the pit was idle and full of water.

Robin Hood Coal-pit, Pine Bush (Wm. Couser).—(1/8/1907): Thickness of seam, 20 ft.; depth of stripping, 5 ft. The pit was not in good working-order, and was evidently idle during the greater part of the winter months. No one about on this date.

Nightcaps Colliery, Nightcaps (J. Lloyd, mine-manager; William Handyside, managing director).—(25/4/1907): Ventilation is registered at 30,000 cubic feet per minute. Nine miss-shots having occurred in seven days, the manager condemned balance of a barrel of fuse as defective. No. 2 District: Pillaring extraction is being conducted in the old Maritime section. No. 1 District: Robbing of pillar and head coal continues. A fire in the rise pillar workings on the fringe of the gob is attributed to the resin seam (which overlies seam being robbed) falling and heating among the fallen clays and gravels. Double stoppings are in, and water-hose laid for emergency of outbreak. New Tangye pump installed in the dip; capacity, 15,000 gallons per hour. Mine in good working-order. Ventilation efficient. (21/6/1907): An unfortunate accident happened this day, whereby William Duncan, deputy, and two repairers named P. Welsh and Wm. Carson were poisoned by fumes containing white damp from an underground fire. From a variety of causes the fire had got out of hand, and the men were overcome while attempting to complete stoppings intended to confine the fire-area. After the bodies were recovered the mine was sealed down, but subsequently reopened and restored toward the end of the year. (11/12/1907): During the closure of No. 1 district output was maintained from the pillars in No. 2 district and from the opencast workings. A ventilating-fan, 6 ft. diameter, electrically driven, has been installed for No. 2 district. Full supplies of timber and material kept on the premises and liberally used as considered necessary. Safety-lamp inspections duly made. Rules posted, and report-books to date.

Hit or Miss Coal-pit, Nightcaps (William Tinker, lessee, permit).—(7/6/1907): Workings advancing towards the south-easterly boundary and up to a triangular area of coal available in the adjoining section, No. 174; estimated area, about 1 acre.

Lamont's Coal-mine (H.B.), Nightcaps (G. R. Spence, lessee).—(7/6/1907): Opencast workings have been resumed on a small scale.

Morley Coal-pit, Nightcaps (G. R. Spence).—(7/6/1907): Operations are again suspended, available coal having been exhausted.

The Willow Coal-pit, Nightcaps (John Clark).—(23/9/1907): 326 tons of coal was mined by two men during the year. The pit was in good working-order, except that the drainage system required to be improved in order to obtain the coal lying underfoot.

Manuka Hill Coal-pit, Nightcaps (Geo. Groves, lessee).—(23/9/1907): The lessee had installed a winding-plant at the top of the hill, and had laid down a tram-line to the pit. Three men were engaged stripping and opening up the coal-seam, which at this point appeared to be 30 ft. in thickness. The pit is drained by means of an oil-engine and pump.

Remarks.

The output of coal and lignite (Southern District) for the year 1907 amounted to 462,010 tons, a decrease of 3,425 tons on the previous year's output.

	Tons.
Canterbury	23,679
Otago	295,350
Southland	142,981
Total	462,010
Output for previous year	465,435
Decrease for 1907	3,425

The contributions by coal-owners to the Coal-miners' Relief Fund amounted to £462 8s. 2d., while payments from the fund to the amount of £491 6s. 3d. have been recommended on account of accidents which have occurred in and about coal-mines in this district during the year.

Summary of Outputs.

District.	Output, 1907.	Output for Otago.	Output, 1906.	Increase, 1907.	Decrease, 1907.	Contributions to Coal-miners' Relief Fund.
	Tons.		Tons.	Tons.	Tons.	£ s. d.
Canterbury	23,679	...	26,553	...	2,874	21 14 2
North Otago	23,075	295,350	26,907	...	3,832	23 17 9
South Otago	227,847		223,015	4,832	...	223 17 6
Central Otago	44,428		53,059	...	8,631	44 11 10
Southland	142,981	...	135,901	7,080	...	148 6 11
Totals ...	462,010	...	465,435	11,912	15,337	462 8 2

Outputs of 10,000 Tons.

	Output, 1907.	Contributions to Coalminers' Relief Fund.
	Tons.	£ s. d.
Kaitangata and Castle Hill	101,818	98 9 10
Nightcaps	49,337	51 7 6
Saddle Hill Collieries—		
No. 1	8,532	8 16 8
No. 2	22,421	23 7 1
Freeman's	24,126	22 8 7
Jubilee	21,330	22 2 4
Allandale	18,408	19 3 4
Taratu	17,513	16 13 11
Homebush	13,879	11 15 7
Bruce	12,077	12 11 8

	Tons.
Fireclay (Canterbury and Otago)	4,465
Hæmatite (Table Hill, Otago)	20
Phosphate rock	5,000
Marl	
Lime	15,345
Sand	16,512

ACCIDENTS.

During the year 113 cases of accident were reported, one accident resulting in the deaths of the three men, while five might be termed serious. The balance—107—mainly trivial accidents incidental to the calling—were chiefly reported in connection with claims for relief from the Coal-miners' Relief Fund, there being no Sick and Accident Fund in connection with the miners' associations in this district. For various reasons five of the claims were not gone on with, and two claims were not admitted to the benefits of the fund.

All accidents were inquired into, and reports on those of a serious nature were duly forwarded to you by me.

There were no serious accidents during the year by falls from roof or sides of working-places.

Fatal Accidents.

21st June, 1907.—William Duncan, forty-nine, deputy; Patrick Welsh, fifty-two, roadsman; and William Carson, thirty-six, roadsman; Nightcaps Colliery, Nightcaps: Poisoned by white damp from underground fire.

Non-fatal (Serious) Accidents.

7th May, 1907.—David Wilson, twenty-seven, trucker, Castle Hill Colliery, Kaitangata: Fracture of right leg; struck by runaway box on the stone drive.

16th May, 1907.—Alexander Robertson, miner, Castle Hill Colliery, Kaitangata: Fracture of skull, by winch-handle reversing while winding a box of coal at top of No. 7 dip.

7th June, 1907.—Donald McMillan, miner, Nightcaps Colliery, Nightcaps: Burns of face, breast, and arms, by accidental ignition of blasting-powder in cannister.

1st July, 1907.—James Fibbes, roadsman, Kaitangata Colliery, Kaitangata: Injury to spine, jammed by runaway rake of boxes.

5th December, 1907.—Andrew Harris, jun., trucker, Woolshed Creek Colliery, Mount Somers: Crushed leg between trucks, necessitating amputation at the thigh.

I have, &c.,
E. R. GREEN,
Inspector of Mines.

APPENDIX B.

PAPERS SET AT THE 1907 MINE MANAGERS' EXAMINATION.

EXAMINATION OF CANDIDATES FOR FIRST-CLASS CERTIFICATES OF COMPETENCY AS MINING MANAGERS.

SUBJECT 1.—PROSPECTING, SHAFT-SINKING, TUNNELLING, AND OPENING OUT A COLLIERY.

1. State conditions by which you would be guided in deciding the position of a pair of shafts required to be sunk for the development of a new coalfield, stating—
(*a.*) The position of the shafts in relation to each other;
(*b.*) The position in relation to the boundaries of the lease if seam lying horizontal; and
(*c.*) If lying at an angle of 17° from the horizontal.
And, assuming the depth of shafts to be 1,000 ft., what size should the winding-shaft be to enable 1,000 tons to be raised in 8 hours from a seam 8 ft. thick, with tubs carrying 11 cwt.?

2. Describe and show by sketches how you would proceed to sink a shaft from the surface to the stone head 100 ft. through very loose ground, with water 500 gallons per minute. Describe the pumps you would use and mode of application, and the means you would adopt to dam the surface water back after reaching the stone head.

3. State the conditions under which it would, in your opinion, be imperative to drive the winning-places in a new colliery right to the boundaries before opening out the workings; and under such conditions, assuming the main seam to be 10 ft. thick and a seam underlying 5 ft. thick, with only 20 ft. of rock between the seams, how would you arrange the working-places in the respective seams so as to permit of their being worked at the same time? Say in which of the seams you would first work the pillars, and give sectional sketch of such workings.

SUBJECT 2.—WORKING COAL AND TIMBERING UNDERGROUND.

1. Sketch a highly inclined seam of coal, and show how you would timber same, the roof being tender, and show how the sets of timber should be secured so that if one were knocked out others would not be affected. Show by sketches the various systems of timbering in use in collieries, and describe the best appliance with which you are acquainted (and means of using it) for driving a heading in hard coal where the use of explosives is not permitted.

2. Enumerate the varying conditions which should, in your opinion, be considered in deciding the mode of working a coalfield, and state the most advantageous conditions for working coal by the longwall method, giving your own experience of the working of coal under this method.

3. When deciding the size of pillars required for the support of a colliery-shaft, state to what extent you would be influenced by the thickness of the seam, the depth from the surface, and the inclination of the strata. Give an example showing the size of shaft-pillars, choosing your own data as to depth and other conditions.

4. Give a short description of any branch of coal-mining, or any special feature connected with same, of which you have made special study, and which you think is of special or important interest to the industry. The subject may be either practical or theoretical, but the work must show special study.

SUBJECT NO. 3.—GASES OF MINES, SPONTANEOUS COMBUSTION, AND VENTILATION.

1. What is the composition of the atmosphere? Give volume and weight of each constituent, and state under what conditions air increases or decreases in weight; also state whether the constituents of the atmosphere are chemically combined or otherwise. Give the chemical symbols and names of the gases most frequently met with in collieries.

2. What is spontaneous combustion, and what causes are assigned for spontaneous outbreaks of fire in collieries? State what measures you would adopt in dealing with such fires. Give reasons.

3. Assume a mine in which the air-current is 100,000 cubic feet per minute, travelling in three splits as follows:—

Split	A	is	6 ft.	by	10 ft., by	8,000 ft. long
"	B	"	6 ft.	"	12 ft., "	15,000 ft. "
"	C	"	5 ft.	"	10 ft., "	6,000 ft. "

find the natural division of the current.

4. The ventilation required in a colliery is—

Split	A,	6 ft.	by	9 ft.,	by	8,000 ft. long:	40,000 cubic feet
"	B,	5 ft.	"	8 ft.,	"	6,000 ft. "	40,000 "
"	C,	9 ft.	"	9 ft.,	"	8,000 ft. "	10,000 "
"	D,	6 ft.	"	8 ft.,	"	10,000 ft. "	30,000 "

In which of the splits should regulators be placed to accomplish the required division of the air; and what will be the mine-pressure? (Use Atkinson's formula.)

5. 50,000 cubic feet of air is passing per minute in a certain colliery in two equal splits, under a pressure of 2 in. of water-gauge, and it is required to reduce the quantity passing in one of the splits by a regulator placed at the end of the split so as to pass 15,000 cubic feet: find the area of the opening in the regulator, assuming that the ventilating-power is decreased to maintain the pressure constant at the mouth of the splits. The size of each split is 6 ft. by 10 ft., by 10,000 ft. long.

6. Ventilate the annexed plan, showing stoppings, air-crossings, air-splits, doors, &c., by conventional signs.

7. Give sketch of good form of self-acting door for main levels in collieries; also describe and sketch a good overcast capable of passing 25,000 cubic feet per minute at a velocity of 5 ft. per second. State kind of material you would use in constructing the crossing.

SUBJECT 4.—DEALING WITH OLD WORKINGS AND OTHER SOURCES OF DANGER.

1. Enumerate the dangers to be apprehended from extensive areas of old workings in collieries, and the precautions you would take in dealing with same for general safety.

2. In a colliery working both to the dip and rise, with seam giving off firedamp freely, explain fully the means you would adopt to secure the maximum degree of safety.

3. How would you overcome the dangers which are liable to arise from the presence of coal-dust in a mine that gives off firedamp freely? and what percentage of firedamp in the general atmosphere of the workings would you consider dangerous in such case?

4. Would you consider it necessary to increase the quantity of air in a mine if it were worked double-shift, and putting out double the quantity of coal, than if worked one shift?

5. Give a complete list of the apparatus and material which should be on hand at collieries in case of general accidents, fires, and explosions.

SUBJECT 5.—STEAM BOILERS AND ENGINES USED ABOUT MINES.

1. Explain the principle of the injector, and state how it is that water at atmospheric pressure and steam at, say, 80 lb. pressure may be forced into a boiler carrying the same pressure without interposing mechanical movement.

2. Describe the type of steam-boiler you consider the best for colliery-work. Give reasons for preference; state the causes leading up to boiler-explosions, and remedies for same. Enumerate the various fittings, and calculate bursting-pressure and safe working-load for a boiler 30 ft. by 7 ft. 6 in. made of ½ in. steel plate.

3. A beam of uniform size is 18 ft. long between supports, and weighs 250 lb.; there is a load of 2,800 lb. at 7 ft. from one end: find the pressure on each support.

SUBJECT 6.—ON MINE-DRAINAGE, HAULAGE, AND APPLIANCES FOR SAME.

1. Find the horse-power required for an endless-rope system of haulage 2,000 yards long, output 1,000 tons per shift of 7½ hours, in a flat seam, the mine-tubs having a capacity of 12 cwt., and weighing each 550 lb.

2. Having a winding-drum 12 ft. diameter, the stroke of engine 5 ft. 6 in., the steam-pressure 100 lb. per square inch, the steam cut off at three-fourths stroke, and load 5 tons, what diameter of double cylinders will be required?

3. A column of pipes 225 yards vertical, filled with water, what is the total pressure upon a ram at the bottom, 8 in. diameter? and what size cylinder would be required with air-pressure of 100 lb. per square inch to keep the said column of water in motion at a speed of 180 ft. per minute, and how many gallons would be pumped per hour?

4. What must the thickness of metal in the walls of a cast-iron pipe 11 in. diameter be to withstand a head of 500 ft.?

5. Supposing you were unwatering a fiery mine from a shaft on the dip of the workings, what would you expect to occur, and what precautions would you take?

6. Give sketches and description of suitable arrangement of colliery sidings, showing position of two shafts with winding-engine and boiler, fan-engine, head-gear, screens, and picking-belts suitable for an output of 1,000 tons daily.

7. What is meant by the term "direct haulage"? Also, what is the difference between the main and tail rope and the endless-rope systems?

SUBJECT 7.—GEOLOGY, SURVEYING, AND MAKING PLANS.

1. Give the definition of "rocks," and state what you understand by the terms "aqueous," "igneous," and "metamorphic"; also what is meant by "stratification" and "cleavage." And give section of any coal-seam of which you have had experience in the Dominion, with the rocks overlying and immediately underlying the seam.

2. Describe the action of dislocations, faults, and dykes, giving sketches in the following order:—

(*a.*) Anticline and syncline;
(*b.*) Slip fault;
(*c.*) Overlap fault;
(*d.*) Trough fault; and
(*e.*) Dyke.

3. Describe and show by sketches how you would proceed to connect the survey of the surface with the underground workings.

4. In the following survey—

A to B, N. 22° 12′ W., 217 links
B to C, N. 17° 48′ E., 389 "
C to D, N. 12° 23′ W., 192 "
D to E, N. 16° 37′ W., 284 "

what is the bearing from A to E, and what is the distance? This question must be answered by computation (only), accompanied by traverse sheet.

5. Plot the following survey to a scale of one chain to an inch, find the closing course and distance, and take out the acreage in acres and decimals:—

S. 45° W., 180 links
S. 38° E., 252 "
N. 61° E., 208 "
S. 17° W., 112 links
N. 76° E., 295 "
N. 28° W., 130 "

6. From the following level readings plot a section to a horizontal scale of 50 ft. to 1 in. and a vertical scale of 10 ft. to 1 in.

Station.	Distance. Ft.	Back Sight.	Fore Sight.	Station.	Distance. Ft.	Back Sight.	Fore Sight.
1	... 0	2·94	3·40	4	... 300	9·21	8·30
2	... 100	4·60	8·20	5	... 400	2·20	0·40
3	... 200	7·21	8·40	6	... 500	3·10	0·56

Assume own datum.

SUBJECT 8.—ARITHMETIC, AND A KNOWLEDGE OF "THE COAL-MINES ACT, 1905."

1. A gravity plane has an inclination of 8°; it is 2,000 ft. long: what is the total rise and grade? State it in per 100 ft.

2. A company contracted to put down a borehole at 5s. per foot for the first 100 ft., 15s. for the second 100 ft., and 10s. additional for each succeeding 100 ft.; the hole was 1,000 ft. deep: what was the cost?

3. The cost of hewing coal by hand in a thin seam is 2s. 9d. per ton; by using coal-cutting machines the cost is reduced 33⅓ per cent.; the daily output is 950 tons, and of this quantity 420 tons are produced by the machines: what is the saving per ton on the gross output?

4. The excavated circumference of a shaft is 62·832 ft., and 13,962 cubic yards of *débris* have been excavated: what is the depth of the shaft, and the cost of sinking same at £12 per running foot?

5. Assume an area of 20 acres of coal 10 ft. thick, of which 30 per cent. has been won in the first working, and from the remaining 70 per cent. 45 per cent. is won: what is the total weight of coal won, assuming a cubic yard equals 18 cwt.; what is the weight in tons lost; and what is the monetary loss to the mine-owner if the profit realised on the coal raised equals 1s. 9d. per ton?

6. What is the average annual profit of a colliery when a shareholder entitled to two-sevenths of the profits receives as his share for 3 years and 3 months the sum of £5,981 2s. 9d.?

7. Briefly state the requirements of the Coal-mines Act as to—

(*a.*) Ventilation,
(*b.*) Explosives,
(*c.*) Signalling,
(*d.*) Machinery,
(*e*) Plans of mines,
(*f.*) Safety-lamps,
(*g.*) Examination of mines,
(*h.*) Withdrawal of workmen.

SECOND-CLASS.

SUBJECT 1.—PROSPECTING, SHAFT-SINKING, TUNNELLING, AND OPENING OUT A COLLIERY.

1. How would you prospect for coal in a new coalfield, and by what indications would you be guided? Describe fully.

2. Describe the general equipment required for sinking a shaft, the precautions required in firing shots in shafts, and such safety appliances as are required for the protection of the workmen engaged.

3. Having bottomed shafts, upcast and downcast, where large feeders of gas are given off, what precautions would you take in driving your winning-places to insure the safety of the men; at what distance would you make crosscuts; and how would you prevent an accumulation of gas at the face? Give sketches showing arrangements.

SUBJECT 2.—WORKING OF COAL AND TIMBERING UNDERGROUND.

1. Describe the systems of working coal of which you have had practical experience. Give sketches, and state the conditions under which any one of the systems is better than others.

2. Describe in detail, and give sketches of, the various systems of timbering in use in coal-mines, and the conditions which would guide you in adopting any one of the systems for the main roads in a mine having a soft floor and seam highly inclined.

3. If you are working chocks in a seam of coal 6 ft. thick with a strong roof, what is the most essential point that the officials should pay attention to? Give the reasons for your answer.

4. When drawing timber, what precautions would you take (*a*) when loosening the timber, (*b*) when removing it from the fall? What tools do you consider necessary for this work?

SUBJECT NO. 3.—GASES OF MINES, SPONTANEOUS COMBUSTION, AND VENTILATION.

1. Describe the gases most commonly met with in coal-mines, giving their chemical symbols, how they may be detected, and the dangers to be feared from their presence.

2. What are the provisions of the Coal-mines Act with regard to the ventilation of mines? and what are the effects of atmospheric changes upon the ventilation of mines?

3. In the event of a mine being on fire what dangers are likely to be encountered, and what precautions would you take in extinguishing the fire to protect the workmen engaged from loss of life by suffocation or explosion, and the possible destruction of the mine?

4. Ventilate the attached plan, and show by conventional signs stoppings, overcasts, &c., and direction of air-currents.

5. In which of two airways, one 6 ft. by 6 ft., the other 9 ft. by 4 ft., and of equal length, would the friction be the greater? Show by figures how you arrive at the result.

6. If 100,000 ft. of air is produced by 50 h.p., what is the water-gauge?

7. Clearly distinguish the meaning of the terms "pressure" and "power" as applied to ventilation.

SUBJECT 4.—DEALING WITH OLD WORKINGS AND OTHER SOURCES OF DANGER.

1. In driving towards old workings known to contain a large accumulation of water under a head of 150 ft., what measures would you adopt to secure the safety of the workmen, and to control the water so that it may be let off without flooding the workings?

2. How would you deal with a "creep" induced by pillars being too small and a hard roof?

3. In making examination of a mine you find it necessary to work certain places with safety-lamps: what other precautions are necessary?

4. Give a sketch of any good form of steam-boiler of which you have a knowledge. Enumerate the various fittings required. Give sketch showing their positions on the boiler; and say what you would do in the event of finding a boiler so short of water that none was visible in the gauge-glass?

5. Calculate the horse-power of a single-cylinder steam-engine—the cylinder 16 in. diameter by 32 in. stroke, running at a speed of 85 revolutions per minute, with a mean effective pressure of 60 lb. per square inch.

6. If you found when a ventilating-fan was running at maximum speed that by opening the doors between the intake and return the quantity of air was not increased, what conclusions would you arrive at, and what steps would you take to improve the ventilation of the mine?

SUBJECT 5.—MINE DRAINAGE AND HAULAGE, AND APPLIANCES FOR SAME.

1. Describe the best system with which you are acquainted for pumping water from dip workings, and state what you consider the most economical and suitable power for application in fiery mines.

2. Give the principle which governs the working of a siphon, with sketch showing how applied. Also give sketch of the working parts of an ordinary lifting set of pumps.

3. Show by sketches the various systems of haulage applicable to coal-mines, and say which in your opinion is the most generally applicable and economical in working, giving reasons.

4. What power would be required to haul 500 tons per shift of 8 hours from a dip the grade of which is 1 in 5 and length 1,000 yards?

5. What is the lowest grade at which a self-acting inclined plane will run? Show by sectional sketch which should be the steepest part of such an incline.

SUBJECT 6.—ARITHMETIC, AND A KNOWLEDGE OF "THE COAL-MINES ACT, 1905."

1. If two pits are winding respectively—No. 1, 1,250 tons 10 cwt. per shift, and No. 2 759 tons 10 cwt. per shift, the cost of production in No. 1 being 4s. 1½d. per ton, and in No. 2 6s. 1d., what will be the average cost per ton of the two together?

2. The shaft-pumps at a colliery raise 150 gallons of water per minute: what storage-room would be required to enable the pumps to be stopped for twelve hours at a time? Give the answer in cubic feet.

3. If 13,146 cubic feet of air weigh one pound, what would be the weight of air in a chamber 18 ft. diameter and 12 ft. high?

4. Plot the following on a scale of 100 ft. to an inch:—

A to B, N. 15° W., 275 ft.	C to D, S. 20° W., 430 ft.
B to C, S. 65° E., 325 ft.	D to E, N. 85° W., 360 ft.

Find the closing course and distance.

5. Cutting 25 yards of bottom, 28 in. thick, 7 ft. wide, is paid for at the rate of 1d. per inch for a width of 5 ft.: how much does the work cost per lineal yard, and what is the total cost?

6. What would be the length of a branch driven at a rise of 6 in. to the yard from one seam to another lying 6 yards above it in level strata?

List of Persons who have obtained Certificates as Mine-managers under the Coal-mines Acts.

First-class Mine-managers' Certificates.

Issued under the Coal-mines Acts, 1886 and 1891.

Aitken, T., Wendon.
Alexander, T., Brunnerton.
Austin, J., Sheffield.
Binns, G. J., Dunedin.
Bishop, J., Brunnerton.
*Brown, T., Westport.
Brown, T., Glentunnel.
Cameron, J., Denniston.
Campbell, J. C., Fairfield.
Cochrane, N. D., Dunedin.
Collins, W., Taupiri.
Dando, M., Brunnerton.
*Elliott, R., Wallsend.
Ferguson, A., White Cliffs.
*Freeman, J., Green Island.
*Geary, J., Kamo.
Gray, J., Abbotsford.
*Harrison, J., Brunnerton.
Irving, J., Kaitangata.
Jemison, W., Waimangaroa.
Kenyon, J., Shag Point.
Kerr, G., Kamo.
Lindsay, W., Otago.
Lloyd, J., Invercargill.
*Louden, J., Green Island.
Love, A., Whangarei.
Mason, J., Nightcaps.
May, J., Greymouth.
Moody, T. P., Kawakawa.
Moore, W. J., Springfield.
Nelson, J., Green Island.
Ord, J., Huntly.
*Redshaw, W., Whangarei.
Reed, F., Westport.
*Richardson, D., Abbotsford.
Shore, J., Kaitangata.
Shore, T., Orepuki.
*Shore, W. M., Kaitangata.
*Smart, W., Christchurch.
Smith, A. E., Nelson.
Smith, T. F., Nelson.
Sneddon, J., Mosgiel.
Swinbanks, J., Kawakawa.
Taylor, E. B., Huntly.
Thompson, A., White Cliffs.
Walker, J., Collingwood.
Williams, W. H., Shag Point.

First-class Certificates issued under the Coal-mines Acts, 1886, 1891, and 1905, after Examination.

Armitage, F. W., Auckland.
Armstrong, J., Brunnerton.
Barclay, T., Kaitangata.
Barclay, W., Kaitangata.
Bennie, Boyd, Waihi.
Brown, J. C., Denniston.
Campbell, Peter, Fairfield.
Carruthers, J., Shag Point.
Carson, W., Kaitangata.
Coombe, J., Waihi.
Coulthard, J., Taylorville.
Dixon, C. W., Granity.
Dixon, W., jun., Kaitangata.
Duggan, George, Burnett's Face.
Dunn, Andrew, Denniston.
Dunn, W., Brunnerton.
Dunn, W. R., Thames.
Elliott, R., jun., Denniston.
Fleming, J., Kaitangata.
Fletcher, James, Granity.
Fry, Sydney, Waimangaroa.
Gibson, John, Westport.
Gillanders, A., Shag Point.
Gowans, W., Millerton.
Green, E. R., Abbotsford.
Green, J., Brunnerton.
Hamilton, J. S., Burnett's Face.
Herd, J., Brunnerton.
Hill, Robert, Abbotsford.
Hosking, G. F., Auckland.
*Hughes, D., Preservation Inlet.
Jebson, D., Canterbury.
Johnson, W. P., Thames.
Leitch, J., Blackball.
Leitch, W., Blackball.
Marshall, A. G., Denniston.
McCaffrey, Patrick, Ferntown.
McCormack, W., Denniston.
McEwan, Robert, Coromandel.
McGeachie, J., Mokau.
Milligan, N., Westport.
Morgan, Wm., Waihi.
Murray, T., Westport.
*Newsome, F., Denniston.
Newton, James, Brunnerton.
Shore, Joseph, Kaitangata.
Smith, George, Fairfield.
Sowerby, H., Denniston.
Tattley, E. W., Huntly.
Tattley, F. J., Mercer.
Taylor, A. H., Waikato.
Thomson, Thomas, Denniston.
Turner, G. F., Shag Point.
Westfield, C. H., Fairfield.
Young, James H., Waimangaroa.

Mine-managers' Certificates, issued under "The Coal-mines Act, 1886," on Production of English Certificate.

Binns, G. J., Dunedin.
Black, T. H., Waipori.
Broome, G. H., Ngakawau.
Cater, T., Auckland.
Cochrane, N. D., Dunedin.
*Garrett, J. H., Auckland.
Hayes, J., Kaitangata.
Hodgson, J .W., Ross.
*Lindop, A. B., Springfield.
Macalister, J., Invercargill.
*Nimmo, J., Oamaru.
*Straw, M., Westport.
Tattley, W., Auckland.

First-class Mine-managers' Certificates, issued to Inspectors of Mines by virtue of Office, under the Coal-mines Acts of 1886 and 1891.

Coutts, J., Thames.
Gordon, H. A., Wellington.
*Gow, J., Dunedin.
McLaren, J. M., Thames.
*Wilson, G., Thames.

Mine-managers' Certificates, issued under the Coal-mines Acts of 1891 and 1905, on Production of Certificate from a recognised Authority outside the Dominion.

First Class.

Alison, R., Greymouth.
Dixon, J., Westport.
Fletcher, George, Westport.
Frame, Joseph, Kaitangata.
Goold, A. L., Auckland.
Irvine, James, Dunedin.
James, Isaac Angelo, Westport.
*Jordan, R. S., Kaitangata.
Kirkwood, D., Coromandel.
Lewis, W., Blackball.
Pollock, James, Green Island, Otago.
*Proud, Joseph, Wanganui.
*Scott, Joseph, Ngahere.
Tennent, R., Brunnerton.
Twining, C. E., Dunedin.
Watson, James, Greymouth.
Wight, E. S., Auckland.
Wood, William, Mokihinui.

Second Class.

Dickinson, W., Gore.
Dowgray, R., Granity.
Greenwell, R., Huntly.
Grenall, S., Granity.
Inglis, A., Huntly.
Lennox, W., Springfield.
Little, W., Wellington.
Littlewood, G. G., Denniston.
Longstaff, H. C., Kaitangata.
McCall, John, Wellington.
McGeachie, J., jun., Mokau.

Second-class Mine-managers' Service Certificates.

Issued under "The Coal-mines Act, 1891."

Carson, M., Kaitangata.
Collier, Levi, Kamo.
Clarke, Edward, Shag Point.
Elliot, Joseph, Coal Creek.
Harris, John, Denniston.
Herd, Joseph, Brunnerton.
Howie, James, Kaitangata.
Leeming, William, White Cliffs.
Lobb, Joseph, Mokau.
Love, Alexander, Orepuki.
McIntosh, Allan, Shag Point.
McLaren, J. M., Thames.
Marshall, J., Ngakawau.
Murray, Thomas, Denniston.
*Nimmo, George Stewart, Ngapara.
Radcliffe, William, Reefton.
*Roberts, John, Brunnerton.
*Ross, John, Kawakawa.
Sara, James, Reefton.
Smith, Charles, Whangarei.
Thomas, James, Springfield.
Wallace, William, Huntly.
Willetts, John, Papakaio.
*Willetts, John Morris, Papakaio.
Young, William, Waimangaroa.

* Deceased since issue of certificates.

Second-class Certificates issued under the Coal-mines Acts, 1886, 1891, and 1905, after Examination.

Austin, W. B., Sheffield.
Barber, John, Shag Point.
Barclay, T., Kaitangata.
Barclay, T., jun., Kaitangata.
Barclay, Wm., Kaitangata.
Barnes, A. E., Shag Point.
Brown, Robert, Kaitangata.
Cadman, J., Hikurangi.
Campbell, Peter, Fairfield.
Charles, E., Glentunnel.
Cherrie, R. C., Mokau.
Christie, James, Saddle Hill.
Clemo, G., Whangarei.
Craig, John, Coal Creek Flat.
Dale, E. G., Kaitangata.
Dixon, W., jun., Kaitangata.
Doel, G., Lovell's Flat.
Duncan, James, Kaitangata.
Duncan, J. E., Kaitangata.
Duncan, John, Lovell's Flat.
Fox, R. A., Blackball.
Harris, A., Saddle Hill.
Hill, R., Abbotsford.
Hodson, John, Kaitangata.
Hunter, A., Southland.
Kells, F. H., Denniston.
Lewis, David, Puponga.
Lindsay, J. B., Orepuki.
McAllister, Neil, Kaitangata.
McLelland, J., Kaitangata.
McLelland, A. C., Kaitangata.
McNeill, D., Fairfield.
Mills, Walter, Huntly.
Neilson, Moffat, Abbotsford.
Ogilvie, W. W., Saddle Hill.
Orr, Hugh, Fairfield.
Parcell, W., jun., Bannockburn.
Penman, C. P., Kaitangata.
Price, F. J., Burnett's Face.
Scoble, E. J., Blackball.
Snow, T., Mercer.
Tattley, F. J., Mercer.
Taylor, Joseph, Collingwood.
Thompson, Joseph, Blackball.
Waldie, A. B., Mokau.
Westfield, C., Fairfield, Otago.
Whittleston, A. W., Shag Point.

APPENDIX C.

STATISTICS OF WORKINGS IN COAL-MINES, 1907

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1907.			Approximate Total Output to 31st December, 1906.	Approximate Total Output to 31st December, 1907.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
NORTHERN INSPECTION DISTRICT.																										
KAWAKAWA DISTRICT.													Tons.	Tons.	Tons.	Tons.	Tons.									
Kawakawa Mine	Neill, S. ..	9	semi-bitum.	1	pillars 6′	6′	1 in 3	bord and pillar	1	5′ 6″ x 3′ 6″	200′	adit	559	..	559	71,873	72,432	1	3	4	horse	..	..	..	..	15/11/07
HIKURANGI DISTRICT.																										
Hikurangi Mine	Moody, T. P. ..	15	ditto	1	7′ to 12′	7′ to 10′ 6″	1 in 6	ditto	3	6′ x 5′	264′	„	56,809	..	56,809	463,713	520,522	8	62	70	horse and steam	16″ 10″	10″ 8″	35′ 35′	natural	18/11/07
Northern Collieries ..	Dunn, W. R. ..	10	„	1	6′ to 9′	6′ to 9′	1 in 10	„	4	9′ x 6′	1,850′	„	48,498	..	48,498	185,473	233,971	9	66	75	ditto	..	..	..	„	18/11/07
NGUNGURU DISTRICT.																										
Tiripaka Mines	Tattley, E. W. ..	8½	„	1	13′ to 20′	11′ to 18′	1 in 6	„	2	9′ x 6′ 8′ x 6′	990′ 930′	„	32,987	..	32,987	95,883	128,870	19	55	74	steam	8″ 6″	5″ 3″	159′ 30′	fan	17/11/07
WAIKATO DISTRICT.																										
Waikato Mine (*stopped*) ..	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taupiri Extended	Wood, W. ..	19½	brown	1	10′ to 30′	20′	1 in 10	bord and pillar	2	10′ diam. 7′ „	166′ 209′	shaft „	49,894	8,280	58,174	772,127	830,301	28	124	152	steam	12″	two 5″	204′	fan	25/6/07
Taupiri Reserve	„	20½	„	1	10′ to 24′	18′	1 in 8	ditto	1	8′ x 6′	50′	adit	5,933	61	5,994	316,949	322,943	3	9	12	„	12″	two 7″	220′	steam	9/8/07
Ralph's Taupiri	Wight, E. S. ..	17½	„	1	10′ to 50′	20′	1 in 10	„	2	9′ 6″ x 5′ 8′ 6″ diam.	145′	shaft	72,107	25,771	97,878	473,463	571,341	30	153	183	„	12″ 12″	two 5″	260′	fan	13/8/07
Taupiri West	McEwan, R. ..	1½	„	1	14′ to 24′	7′ to 10′	1 in 7	..	1	9′ 6″ x 5′ 6″	250′	„	..	..	..	..	..	9	9	18	oil engine	12″	5″	130′	natural	13/11/07
Collins's brickyard	Greenwell, Robert	2	„	1	14′	8′	varied	bord and pillar	1	8′ x 9′	..	adit	180	..	180	..	180	..	2	2	..	..	..	..	„	13/11/07
MOKAU DISTRICT.																										
Mangapapa Mine	Lennox, Wm. ..	23	„	1	6′ to 8′	6′ to 8′	1 in 10	ditto	1	9′ x 6′	1,752′	„	4,967	..	4,967	47,999	52,966	2	11	13	horse	..	..	..	furnace	22/10/07
MIRANDA DISTRICT.																										
Union Colliery	Tattley, F. J. ..	6	„	1	57′	20′ to 30′	varied	„	1	4′ x 4′ 6′ x 6′	90′ 333′	„	10,388	8	10,396	61,757	72,153	14	16	30	steam	12″ 18″	6″ 6″	90′ 90′	steam	11/12/07
DRURY DISTRICT.																										
Drury Mine	Holden, James ..	3	„	1	13′ 6″	7′ 6″	1 in 6	„	1	6′ x 5′	700′	„	487	48	535	958	1,493	1	3	4	manual	..	..	..	natural	12/12/07
Output of mines included in 1906 statement at which operations are suspended ..															..	1,653,899	1,653,899									

COLLINGWOOD.																														
Pakawau		McCaffrey, P.	2½	bitum.	1	3′ 3″	3′ 3″	1 in 3½	longwall	1	8′ x 7′	300yds.	adit	149	..	149	7,269	7,418	..	4	4	steam	Free d	rain	age	natural	13/12/07
Puponga		Taylor, A. H.	4	"	1	2′ to 6′	all	1 in 3½	bord and pillar	2	9′ x 6′ 6″	1,188′	engine plane	8,692	5,577	14,269	52,919	67,188	16	28	44	"	10″	7″	360′	Hayes fan	13/12/07
WESTPORT.																														
Seddonville State Colliery		Fletcher, James	4	"	1	12′	8′	variable	ditto	1	12′ x 6′ (shaft) 10′ x 7′ (tunnel	150′ 72 ch.	endless rope adit	28,899	6,537	35,436	118,743	154,179	20	72	92	"	Free d	rain	age	fan	3/12/07
Westport-Stockton		Marshall, A. G.	..	"	..	12′ to 20′	..	1 in 17	under development	..	8′ x 7′	700′	..	..	..	..	..	..	120	20	140	electric	Free d	rain	age	"	7/12/07
Millerton, Granity		Dunn, William	16	"	1	4′ to 40′	12′	variable	bord and pillar	..	10′ x 6′* 10′ x 6′† 11′ x 7′‡	33 ch. 45 ch. 19 ch.	endless rope	248,823	48,931	297,754	2,036,706	2,334,460	120	349	469	gravita'n Two drives	12″	4″ rain	30′ age	1 Hayes fan 1 Schiele fan	5/12/07
Coalbrookdale, Denniston		Dixon, C. W.	27	"	2	4′ to 18′	all	variable	ditto	..	8′ x 8′ 9′ x 5′	8,200′ 2,500′	ditto	235,560 (For both mines at Denniston.)	77,445	313,005	4,416,755	4,729,760	82	194	276	steam	Free d	rain	age	1 Hayes fan	5/11/07
Ironbridge, Denniston		Milligan, Nicholas	16	"	1	4′ to 20′	all	variable	"	..	8′ x 6′ 8′ x 6′	9,100′ 1,200′	"						95	254	349	steam	10″ 6″	5″ 4″	30′ 30′	Schie e fan	6/11/07
BULLER ROAD.																														
White Cliffs		Burley, W. D.	12	brown	1	16′ to 18′	9′	1 in 4	"	..	10′ x 7′	250′	adit	1,036	..	1,036	3,745	4,781	..	2	2	manual	Free d	rain	age	natural	30/11/07
THREE-CHANNEL FLAT.																														
Flaxbush		Morganti, Carli	7	"	2	4′ and 2′	all	1 in 10	longwall	..	6′ x 5′	1,050′	"	699	..	699	5,611	6,310	1	2	3	"	Free d	rain	age	"	29/11/07
BOATMAN'S.																														
Archer's Freehold		Archer, F. W.	13	bitum.	2	10′ and 12′	9′	1 in 25	bord and pillar	..	7′ x 5′	600′	"	1,000	..	1,000	10,741	11,741	..	2	2	"	Free d	rain	age	"	20/11/07
Coghlan's Freehold		Coghlan, J.	11	"	1	12′	8′ 6″	1 in 3	ditto	..	6′ x 4′	400′	"	75	207	282	1,764	2,046	..	1	1	"	Free d	rain	age	"	20/11/07
REEFTON.																														
Burke's Creek		Cairns, R.	6	brown	1	12′ to 14′	10′ to 12′	1 in 6	"	..	8′ x 10′	No. 1, 500′ No. 2, 260′ No. 3, 160′ No. 4, 150′	"	184	..	184	5,957	6,141	1	2	3	"	Free d	rain	age	"	20/11/07
Lockington's Mine, Burke's Creek		Lockington, E.	6	"	1	10′	6′	1 in 4	"	..	6′ x 5′	128′	adit	335	..	335	128	463	..	2	2	"	Free d	rain	age	"	20/11/07
Murray Creek		Billett, James	28	bitum.	1	12′	all	variable	open face	..	..	..	..	79	2,011	2,090	21,477	23,567	2	..	2	..	..	..	..	..	22/11/07
Phœnix and Venus, Murray Creek		Knight, John	26	"	2	10′	8′	1 in 2	bord and pillar	..	5′ 6″ x 4′ 6″	250′	adit	701	111	812	23,061	23,873	1	4	5	manual	Free d	rain	age	natural	22/11/07
Morris's Mine, Murray Creek		Morris, John	1	"	1	11′	11′	variable	ditto	..	5′ x 3′	30′	"	191	..	191	..	191	..	2	2	"	Free d	rain	age	"	22/11/07
Reefton		Harris, John	5	brown	1	12′	8′	1 in 5	"	..	6′ x 5′	500′	"	437	495	932	1,761	2,693	1	2	3	"	Free d	rain	age	"	19/11/07
Reefton Town Belt		Morris, James	1	"	1	3′	3′	1 in 4	"	..	6′ x 3′	350′	"	210	..	210	..	210	..	2	2	"	Free d	rain	age	"	19/11/07
Waitahu		King, John	5	semi-bitum.	2	5′ to 15′	6′	1 in 3	"	..	8′ x 6′	600′	"	709	..	709	758	1,467	2	2	4	"	Free d	rain	age	"	20/11/07
Lankey's Creek		Pascoe, Simon	5	semi-bitum.	1	8′	7′	1 in 25	"	..	6′ x 4′	500′	"	660	75	735	9,793	10,528	..	2	2	"	Free d	rain	age	"	19/11/07
Progress		Kearns, R. L.	10	pitch	1	4′	4′	1 in 5	"	..	6′ x 4′	200′	level adit	3,268	..	3,268	24,147	27,415	1	5	6	horse	Free d	rain	age	"	21/11/07

* Main heading. † Mine creek heading. ‡ New tunnel.

STATISTICS of WORKINGS in COAL-MINES, 1907—*continued.*

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1907.			Approximate Total Output to 31st December, 1906.	Approximate Total Output to 31st December, 1907.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
WEST COAST INSPECTION DISTRICT—*continued.*																										
GREYMOUTH.													Tons.	Tons.	Tons.	Tons.	Tons.									
Paparoa..	Watson, James ..	..	anthracite	6	12′	..	1 in 6	under development	..	11′ x 7′ 6″	50 ch.	..	..	..	..	..	..	60	80	140	..	..	..	..	wtr dr'p, stm jet, and fan	12/11/07
Blackball	Leitch, Walter ..	17	bitum.	2	17′	15′	1 in 6	bord and pillar	..	9′ x 6′ 10′ x 7′	1,232′ 600′	adit	77,128	15,890	93,018	848,189	941,207	30	100	130	steam	Free d	rain	age	fan	16/11/07
Brunner, ...	Alison, R. ..	43	„	1	12′	all	1 in 4	ditto.	1	12′ x 10′	20′	„	2,670	3,039	5,709	2,167,231	2,172,940	2	9	11	horse	Free d	rain	age	natural	13/11/07
Tyneside, Brunnerton ..	Armstrong, J. ..	25	„	1	12′	all	1 in 4	„	1	10′ diameter	103′	shaft	40,609	34,253	74,862	179,893	254,755	45	125	170	steam	36″	12″	260′	fan	13/11/07
Thornton's Lease	Boustridge, H. ..	..	„	1	7′ to 16′	..	1 in 1	under development	..	..	..	..	..	..	..	..	..	8	..	8	..	..	..	..	..	..
Point Elizabeth State Mine..	Herd, Joseph, and Coulthard, John	3½	„	1	8′	8′	1 in 24	bord and pillar	..	10′ x 7′	No. 1 242 yd.	endless rope	146,038	59,299	205,337	355,871	561,208	82	204	286	steam	No. 1, 13″	6″ ram dbl. actg	390′	fan	14/11/07
											No. 2 264 yd.	..	..	..	..	..	..	..	..	..	..	No. 2, 13″	ditto	420′	„	
Output of mines included in 1906 statement at which operations are suspended ..																1,172,079	1,172,079									
SOUTHERN INSPECTION DISTRICT.																										
CANTERBURY.																										
Springfield, Springfield ..	Taylor, James ..	31	brown	1	3′ 3″	all	1 in 6	bord and pillar	..	4′ x 5′	70′	tunnel	249	..	249	89,878	90,127	..	2	2	steam	direct st	acting eam		exhaust steam from pump	4/1/07
Springfield Fireclay Works Springfield	Greening, Luke ..	7	„	1	4′	„	1 in 6	ditto	1	4′ 6″ x 3′	50′	adit	..	..	..	472	472	1	2	3	horse	steam	pump		natural	18/4/07
Homebush, Glentunnel ..	Campbell, J. C. ..	35	„	1	6′ x 7′	„	1 in 3	„	1	6′ x 6′	40 ch.	tunnel	12,531	1,349	13,880	198,202	212,082	5	31	36	horse & steam	..	..	..	furnace	21/11/07
St. Helen's, White Cliffs ..	Levick, H. ..	26	„	4	8′ 4′ 6″ 3′	„	1 in 3	pillar, stope, and wall	1	4′ 6″ x 3′ 7″	90′ 5 ch.	adit	1,152	..	1,152	15,220	16,372	1	4	5	hand	..	..	..	natural	21/11/07
Mount Somers, Mount Somers	Thompson, A. ..	6	„	1	30′	10′	south 1 in 4½	bord and pillar	1	5′ x 4′	25′	„	3,219	415	3,634	20,610	24,244	2	7	9	horse	..	..	..	„	18/12/07
Woolshed Creek, Mount Somers	Harris, T. (permit); Doak, W. T. (secretary)	43	„	1	40′	15′	1 in 9	ditto	..	..	..	„	715	2,294	3,009	53,065	56,074	1	5	6	„	..	..	..	„	18/12/07

Te Moana, Geraldine ..	Crowe, C. A. and C. H. (lessees)	1	..	..	..	..	..	..	..	..	..	..	30	..	30	..	30	4	2	6	..	..	..	..	natural	..
Albury, Albury	Willetts, G. H. ..	16	brown	1	10′	7′	1 in 1	bord and pillar	1	4′ x 3′ 6″	68′	adit	846	..	846	7,981	8,827	1	3	4	horse	..	..	..	″	..
Waihao Forks, Waihao Forks	Waihao Coal Syndicate (owners), Lomas, G. (permit)	15	lignite	1	6′	5′	..	ditto	..	5′ x 4′	100′	″	707	..	707	1,860	2,567	2	5	7	″	steam	pump		″	..
Waihao, Waihao Forks ..	Allen, Alexander	18	″	1	14′	all	..	″	..	5′ x 4′	260′	″	10	..	10	2,032	2,042	..	1	1	hand	..	..	..	″	..
Elephant Hill, Waihao Downs	Mathias, L. ..	39	brown	1	10′	8′	..	″	..	6′ x 5′	..	″	66	..	66	562	628	..	2	2	″	..	..	..	″	..
Private Pits.																										
Dalethorpe, Springfield ..	Rutherford, G. ..	13	″	1	6′	all	..	..	..	..	..	..	42	..	42	368	410	..	1	1	..	..	..	..	″	..
Snowdon, Rakaia Gorge ..	Gerard, George ..	21	″	1	14′	8′	1 in 3	narrow	1	4′ x 4′	90′	shaft	..	..	..	1,808	1,808	..	..	..	hand	..	..	..	″	..
Craigieburn, West Coast Road	Manson, D. ..	11	″	1	..	..	..	open	..	..	..	open	54	..	54	324	378	..	..	..	″	..	..	..	″	..
Christchurch Lime Company, Staveley	Scott, R. L. (secretary), Christchurch	6	″	1	5′	all	vertical	levels	..	5′ x 4′	150 yd.	adit	..	..	..	901	901	..	..	..	..	..	..	..	″	..
NORTH OTAGO.																										
Dalgety, Hakataramea ..	Drysdale, J. ..	26	″	1	30′	..	semi-vertical	bord and pillar	..	..	..	″	120	..	120	2,517	2,637	..	1	1	..	..	..	..	″	..
Wharekuri, Wharekuri ..	Shanks, A. ..	..	″	1	40′	13′	vertical	levels	..	..	..	″	231	..	231	2,286	2,517	1	1	2	hand	..	..	..	″	..
Kurow, Kurow	Sanderson, J. ..	11	″	1	indefinite	30′	″	stoping	1	8′ x 6′	50′	dip drive	432	..	432	2,785	3,217	..	1	1	horse	..	..	..	″	..
St. Andrew's, Papakaio ..	Nimmo, T. ..	29	″	1	6′ 6″	6′	1 in 4	bord and pillar	1	4′ x 2′ 6″	60′	adit	1,639	..	1,639	37,981	39,620	1	4	5	″	..	..	..	furnace	..
Prince Alfred, Papakaio ..	Willetts, C. (permit)	38	″	1	1′ to 9′	all	1 in 9	ditto	1	5½′ x 6′	51′	″	819	..	819	51,891	52,710	2	3	5	″	..	..	..	natural	..
Ngapara, Ngapara	Nimmo, W. ..	29	″	1	25′	8′	1 in 17	″	1	4′ x 4′	50′	″	1,042	..	1,042	23,245	24,287	1	2	3	″	..	..	..	″	..
Shag Point, Shag Point ..	Hunt, W. (permit)	37	pitch	..	2′ 6″	all	..	″	..	..	..	″	360	24	384	404,467	404,851	1	2	3	hand	..	..	..	″	..
Allandale, Shag Point ..	Westfield, C. H...	20	″	3	4′ to 6′	″	1 in 4	bord and pillar & longwall	2	10′ x 6′ 8′ x 4′	1,000′ 280′	incline tunnel	11,930	6,478	18,408	273,035	291,443	12	68	80	electric	..	..	..	fan	10/9/07
SOUTH OTAGO.																										
Fernhill, Abbotsford ..	Gray, J. ..	30	brown	1	19′	10′	1 in 10	bord and pillar	1	4½′x 4½′	50′	level	354	1,245	1,599	143,871	145,470	5	4	9	horse	..	..	..	natural	5/12/07
Freeman's, Abbotsford ..	Sneddon, J. ..	27	″	2	7′ to 14′	6′ to 7′	1 in 7	ditto	3	6′ x 5′ 7′ x 7′	1,400′ 264′	inclined drive	21,534	2,592	24,126	339,846	363,972	9	36	45	steam & horse	12″	5″	130′	furnace	5/12/07
Green Island, Green Island*	Barclay, jun., T.	20	″	1	14′	10′	1 in 10	″	..	..	..	adit	93	..	93	550	643	1	2	3	horse	..	..	..	natural	6/12/07
Jubilee, Walton Park ..	Campbell, P. ..	10	″	1	12′ to 18′	8′	1 in 10	″	2	6′ x 5′	4 ch.	″	17,098	4,232	21,330	105,855	127,185	6	25	31	steam & horse	..	..	..	furnace	6/12/07
Burnweil, Saddle Hill ..	Harris, A. ..	26	″	1	16′	7′ to 9′	1 in 9	″	1	6′ x 4′	4 ch.	tunnel	3,345	..	3,345	59,157	62,502	2	4	6	ditto	..	..	..	natural	6/12/07
Saddle Hill (No. 1), Saddle Hill	Christie, W. H. L.	35	″	1	20′	8′ to 16′	1 in 10	″	4	5′ 10″ x 4′ 6″	264′	inclined drive	4,095	4,437	8,532	160,199	168,731	3	13	16	″	..	..	..	furnace	6/12/07
Saddle Hill (No. 2), Saddle Hill	Hill, Robert ..	6	″	1	20′	all	1 in 14	″	1	..	..	adit	6,560	15,861	22,421	62,152	84,573	10	22	32	″	..	..	..	″	6/12/07
Lauriston, Brighton ..	Walker, James ..	21	″	1	6′	5′ 6″	variable	″	1	..	48′	tunnel	335	82	417	6,763	7,180	1	1	2	horse	..	..	..	″	11/7/07
Brighton, Brighton ..	McColl, D. L. ..	19	″	1	6′	5′ 6″	″	″	..	..	..	″	119	95	214	2,269	2,483	1	1	2	″	..	..	..	natural	11/7/07
Ferndale, Taieri Mouth ..	Fairbairn, R. ..	24	″	1	10′	8′	..	″	..	10′ x 8′	100′	″	62	..	62	741	803	..	1	1	hand	..	..	..	″	..
Bruce, Milton	Young, A. ..	39	″	1	15′	9′	1 in 8	″	..	..	..	adit	..	..	..	24,314	24,314	..	..	..	″	..	..	..	″	..
Real Mackay, Milton ..	(Lovell's Flat Coal Co.) Carruthers, James	3	″	1	8′	6′	1 in 7	″	..	..	7 ch.	″	5,399	2,644	8,043	11,617	19,660	5	10	15	steam	..	..	..	″	11/9/07

* Prior to 1890 this mine had produced 108,198 tons, which are included in the additions at end of statement.

STATISTICS of WORKINGS in COAL-MINES, 1907—*continued.*

SOUTHERN INSPECTION DISTRICT—*continued.*

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts. Size of Shaft or Adit.	Dimensions of Shafts. Depth of Shaft or Length of Adit.	Output delivered by	Output for 1907. Coal.	Output for 1907. Slack.	Output for 1907. Total.	Approximate Total Output to 31st December, 1906.	Approximate Total Output to 31st December, 1907.	Number of Men ordinarily employed. Above.	Below.	Total.	Power used for drawing Mineral.	Pumps. Stroke.	Pumps. Size of Barrel.	Pumps. Height of Column.	Means of Ventilation.	Date of Inspector's Last Visit.
SOUTH OTAGO—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Waronui (Bruce Railway and Coal Company), Milton	Barclay, T. ..	3	brown	1	14′	7′	1 in 7	bord and pillar	1	..	..	dip	12,077	..	12,077	15,796	27,873	6	17	23	steam	..	..	..	furnace	11/9/07
Wallsend, Lovell's Flat ..	Hewitson, R. ..	37	lignite	1	20′	all	..	open	..	..	..	open	60	..	60	11,431	11,491	1	..	1	hand	..	..	..	..	..
Benhar, Stirling	McSkimming, P.	44	"	3	30′ in aggregate	12′	..	bord and pillar	..	4′ x 4′	..	incline	2,833	867	3,700	114,587	118,287	1	4	5	steam	..	..	..	natural	..
Mount Wallace, Stirling ..	Park, F. ..	13	"	1	14′	8′ to 10′	..	ditto	..	..	..	adit	637	135	772	6,550	7,322	..	1	1	horse	..	..	..	"	..
Taratu, Taratu	Shore, T. ..	6	brown	1	20′	8′ to 14′	1 in 10	"	2	6′ x 6′	200′	"	14,220	2,293	16,513	74,900	91,413	13	30	43	oil-engine	..	..	..	"	16/12/07
Kaitangata and Castle Hill, Kaitangata	Carson, W. (N.Z. Coal and Oil Co., O. G. Lockhart, sec.)	31		3	50′ in aggregate	all	1 in 1½ to 1 in 4	"	1	13′ x5′ 9′ x 7′ 6′ diam.	200′ 51 ch. 360′	inclined	63703	38,115	101,818	2,100,547	2,202,365	70	256	326	steam & compressed air	2′ 6″ three	6″ e-th pumps	280′ row s	fan	17/12/07
		14	"	4	50′ in aggregate	"	1 in 1½ to 1 in 4	"	1	11′ x 6′ 6″ 9′ diam.	45 ch. 526′	"									ditto	ditto	6″	500′	furnace	23/7/07
Port Arthur, Kaitangata ..	Irvine, J. ..	3	"	1	10′	..	..	..	..	..	66 ft.	level	27	..	27	129	156	1	1	2	hand	..	..	..	natural	24/7/07
Wangaloa, Kaitangata ..	Smith, J. ..	27	"	1	10′ 6″	8′	1 in 6	"	..	..	..	adit	70	..	70	1,866	1,936	..	1	1	"	..	..	..	"	..
Mainholm, Waipahi ..	Lischner, W. ..	22	lignite	1	15′	all	..	open	..	..	..	open	2,604	..	2,604	45,728	48,332	3	..	3	horse	centr steam-	ifugal driven		..	..
Private Pits.																										
Glenmuir (late Drummuir), Brighton	Louden, A. ..	2	brown	1	..	..	..	..	..	..	..	adit	..	..	..	41	41	..	..	..	..	..	..	..	..	..
Lakeside, Lovell's Flat ..	McGilvray, W. ..	7	"	1	..	..	..	..	..	..	..	..	24	..	24	875	899	1	..	1	..	..	..	..	..	..
CENTRAL OTAGO.																										
Coal Creek (leasehold)	Barber, J.	37	lignite	1	80′	all	..	open	..	..	..	open	1,850	..	1,850	44,040	46,914	4	..	4	horse	hand pump			..	7/6/07
Coal Creek (freehold), Coal Creek Flat		6	"	1	..	..	..	bord and pillar	1	6′ x 7′	150′	adit	1,024	..	1,024			..	3	3	hand	..	..	..	natural	7/6/07
McPherson's, Coal Creek Flat	McPherson, M. ..	37	"	1	80′	30′ to 40′	1 in 6	open	..	..	..	open	4,024	..	4,024	43,996	48,020	6	..	6	horse	drainage tunnel			..	7/6/07
Perseverance, Coal Creek Flat	Craig, W. (permit)	20	"	1	99′	70′	1 in 4	open & bord & pillar	..	6′ x 7′	..	open & adit	2,952	..	2,952	36,816	39,768	2	4	6	Pelton wheel & winch	hyd jet	raulic pump		natural	7/6/07
Alexandra, Alexandra	Mathias and Co. (own's); Turner, G. T. (manager)	27	brown	1	14′	7′	1 in 7	bord and pillar	2	5′ x 2′ 6″ 6′ x 4′	60′	adit	4,600	333	4,933	56,678	61,611	1	10	11	steam	Snow	pump		furnace and natural	27/9/07
Undaunted, Alexandra		7	"	1	7′	6′	1 in 7	ditto	1	5′ x 2′ 6″	70′	shaft	..	..	..	3,159	3,159	..	..	..	horse	water-	bucket		natural	..
Molyneux (Alexandra Coal Company), Alexandra	Pollock, J. ..	9	"	1	28′	8′	variable	"	1	6′ x 4′	60′	"	7,792	1,300	9,092	68,104	77,196	5	17	22	steam	3-thr pump	ow ram & Snow pump		steam-jet	9/8/07

Cambrian's, Cambrian's ..	Dungey, C. ..	23	lignite	1	9′	all	..	open	..	..	..	open	12	..	12	14,448	14,460	1	..	1	horse	..	..	..	..	..
Welshman's Gully, Cambrian's	McGuckin, J. ..	46	"	1	30′	"	..	"	..	..	..	"	301	..	301	32,540	32,841	2	..	2	"	..	..	..	..	..
Jones's, Cambrian's ..	Jones, R. ..	3	"	1	..	..	..	"	..	..	..	"	40	..	40	..	40	1	..	1	"	..	..	..	..	..
St. Bathan's, St. Bathan's ..	Enwright, J. ..	10	"	1	30′	all	..	"	..	..	..	"	481	..	481	3,741	4,222	2	..	2	"	drainag	tu	nnel	..	16/7/07
Beck's Idaburn, Idaburn	Beck, W., Mrs. M. Beck (owner)	21	"	1	35′	"	..	"	..	..	..	"	982	..	982	21,253	22,235	3	..	3	"	..	..	..	..	18/7/07
McLean's, Idaburn		..	"	1	15′	"	..	"	..	..	..	"	..	..	..	1,127	1,127	..	..	..	..	..	..	..	..	..
Idaburn, Idaburn ..	White, J. ..	37	"	1	20′	"	..	"	..	..	..	"	1,008	..	1,008	37,770	38,778	2	..	2	horse	..	..	..	..	..
Gimmerburn, Gimmerburn ..	Docherty, C. ..	51	"	1	12′	"	..	"	..	..	..	"	48	..	48	2,869	2,917	1	..	1	hand	..	..	..	..	..
Vincent, Clyde	Smith, George, Clyde Collieries Company (owners), A. E. Ackroyd (sec.), Dunedin	..	brown	2	40′	14′	1 in 2	levels	..	..	..	dip	2,361	..	2,361	21,774	24,135									
Dairy Creek, Clyde		35	"	2	40′	14′	1 in 2	"	..	..	..	incline ditto	1,251	..	1,251	22,817	24,068	1	8	9	steam	steam-driven	..	..	natural	15/11/07
Cardrona, Cardrona ..	McDougall, R. ..	23	"	1	30′	all	vertical	open	..	..	..	open	1,566	..	1,566	20,635	22,201	5	..	5	horse	..	..	..	..	..
Gibbston, Gibbston ..	Duncan, J. ..	21	"	1	30′	"	1 in 2	bord and pillar	..	..	..	adit	870	164	1,034	14,280	15,314	1	3	4	hand & steam	..	..	..	natural	18/6/07
Shepherd's Creek (late Kawarau), Bannockburn	Cromwell and Bannockburn Collieries Co., T. K. Harty, managing director, Dunedin; A. S. Gillanders, mine-m'g'r.	30	"	1	10′	6′	1 in 4	ditto	1	6′ x 6′	34′	incline	3,159	..	3,159	44,288	47,447	3	9	12	steam	steam-driven	..	..	"	28/11/07
Excelsior (including Bannockburn), Bannockburn		15	"	1	6′	5′	1 in 4	"	1	6′ x 5½′	..	"	3,363	..	3,363	55,465	58,828	3	8	11	"	ditto	..	..		28/11/07
		18	"	1	6′	5′	1 in 4	"	1	6′ x 4′	20′	adit														
Cairnmuir, Bannockburn ..	Hodson, J. ..	5	"	1	12′	8′	semi-vertical	level & heading	2	..	..	incline	3,174	..	3,174	5,044	8,218	2	8	10	"	"	..	..	"	28/11/07
Nevis, Nevis	Scott, C. ..	13	"	1	20′	all	vertical	open	..	..	..	open	..	..	..	5,589	5,589	..	..	..	hand	..	..	..	..	..
Ryders, Nevis	Scott, C. ..	7	"	1	45′	"	"	"	..	..	..	"	601	..	601	3,217	3,818	1	..	1	"	..	..	..	..	..
Nevis Crossing, Nevis ..	Ritchie, Robert ..	5	"	1	..	..	semi-vertical	"	..	..	..	"	1,161	..	1,161	3,857	5,018	2	..	2	"	..	..	..	..	..
Upper Nevis, Nevis ..	Ritchie, James ..	3	"	1	..	all	..	"	..	..	..	"	..	..	..	140	140	..	..	..	..	..	..	..	..	..
Private Pits.																										
Kyeburn, Kyeburn Diggings	McCready, W. J.	24	"	1	..	..	vertical	levels	..	..	..	adit	..	..	..	15,452	15,452	..	..	..	hand	..	..	..	natural	..
McKnight's, Blackstone Hill	McKnight, D. ..	10	lignite	1	12′	all	..	open	..	..	..	open	9	..	9	166	175	1	..	1	"	..	..	..	..	..
Angel's, Bannockburn ..	Angel, C. J. ..	5	brown	1	..	"	..	"	..	..	..	"	2	..	2	14	16	1	..	1	"	..	..	..	..	..
SOUTHLAND.																										
Pukerau, Pukerau	O'Hagan, C. (permit)	27	lignite	1	16′	8′ to 10′	1 in 10	bord and pillar	1	8′ x 8′	11 ch.	adit	765	..	765	33,146	33,911	1	2	3	horse	wind	mill	..	natural	..
Nelson's, Pukerau	Nelson, J. H. ..	18	"	1	16′	10′	..	ditto	..	..	..	"	195	..	195	3,634	3,829	..	1	1	hand	Doug	las	..	"	..
Whiterigg, Gore ..	Jones, E. (permit), W. H. Paterson and E. Jones (owners)	25	"	1	18′	12′	1 in 20	"	1	6′ x 5′	2 ch.	incline tunnel	2,832	..	2,832	26,580	29,412	1	3	4	horse	Tangye	..	..	"	24/4/07
Heffernan's, Gore ..		29	"	1	11′	8′	..	levels & headings	1	6′ x 5′	..	ditto	537	..	537	12,426	12,963	1	2	3	"	hand-pump	..	..	"	24/4/07
Rosedale, Gore	Mutch, A. ..	21	"	1	7′	all	..	open	..	..	..	open	336	..	336	5,047	5,383	1	..	1	"	..	..	..	..	26/7/07
Green's, Gore	Mason, J. ..	19	"	1	22′	17′	1 in 20	bord and pillar	1	10′ x 8′	5 ch.	incline tunnel	7,147	260	7,407	66,741	74,148	2	5	7	"	Tangye	..	..	natural	31/7/07
Smyth's, Gore	Dickinson, W. ..	11	"	1	20′	15′	1 in 20	ditto	..	..	..	ditto	4,016	30	4,046	8,248	12,294	1	4	5	"	"	..	..	"	26/7/07
River View, Gore	Nicol, L. D. ..	16	"	1	..	..	..	open	..	..	..	open	20	..	20	1,598	1,618	1	..	1	hand	..	..	..	..	..
Bushy Park, Croydon	Tweedie, Geo. (permit), J. R. Tait and Co. (owners)	2	"	1	14′ to 23′	all	..	"	..	..	..	"	3,824	..	3,824	2,746	6,570	1	4	5	horse	Cali p	forn um	ian p	..	..
Boornwell, Chatton ..	Stark, W. (permit)	8	"	1	16′	12′	1 in 10	levels & headings	..	20′ x 12′	100′	adit	3,136	..	3,136	11,180	14,316	..	4	4	"	hand-pump	..	..	natural	2/4/07
Ford's, Chatton ..	Gerkin, M. ..	27	"	1	..	all	..	open	..	..	..	open	616	..	616	608	1,224	2	..	2	"	..	..	..	..	..
Pacey's (freehold), East Chatton	Maslin, T. (permit)	4	"	1	30′	10′ to 12′	..	"	..	..	..	"	4,805	..	4,805	22,761	27,566	1	3	4	steam	hand-pump	..	..	..	2/4/07

Name of Mine and Locality.	Name of Manager.	Number of Years worked.	Quality of Coal.	No. of Seams worked.	Thickness of Seams.	Thickness worked.	Dip of Seam.	System of Underground Working.	Number of Shafts.	Dimensions of Shafts.		Output delivered by	Output for 1907.			Approximate Total Output to 31st December, 1906.	Approximate Total Output to 31st December, 1907.	Number of Men ordinarily employed.			Power used for drawing Mineral.	Pumps.			Means of Ventilation.	Date of Inspector's Last Visit.
										Size of Shaft or Adit.	Depth of Shaft or Length of Adit.		Coal.	Slack.	Total.			Above.	Below.	Total.		Stroke.	Size of Barrel.	Height of Column.		
													Tons.	Tons.	Tons.	Tons.	Tons.									
SOUTHERN INSPECTION DISTRICT—*continued.*																										
SOUTHLAND.—*continued.*																										
East Chatton, East Chatton	Perkins, A. ..	5	lignite	1	30′	20′	1 in 5	..	..	..	..	levels	1,500	..	1,500	4,750	6,250	..	2	2	horse	..	..	..	natural	2/4/07
Thorndale, Waikaka Valley..	Highsted, T. ..	8	"	1	10′	all	..	open	..	..	..	open	169	..	169	7,933	8,102	1	..	1	"	..	..	..	..	26/7/07
Springvale, Waikaka Valley	McColl, D. (permit)	14	"	1	10′	"	..	"	..	..	..	"	1,866	..	1,866	14,684	16,550	2	..	2	"	..	..	..	..	4/4/07
Willow Bank, Waikaka Valley	Jones, W. (permit)	11	"	1	15′	"	..	bord and pillar	..	..	..	..	9,083	..	9,083	22,095	31,178	1	5	6	steam	two Dougla s pumps			natural	4/4/07
Glenlee, Wendon Valley ..	McGill, D. T. (permit)	14	"	1	14′	8′	..	levels & headings	..	10′ x 8′	2 ch.	adit	716	..	716	9,265	9,981	..	1	1	horse	..	..	..	"	30/5/07
McDonald's, Wendon ..	Coulter, S. (permit)	8	"	1	16′	12′	..	ditto	..	12′ x 12′	..	"	3,310	..	3,310	13,299	16,609	1	3	4	steam	syphon	..	..	"	30/5/07
Radford's, Wendon ..	Yeomans, S. ..	17	"	1	20′	all	vertical	stoping	..	..	..	incline tunnel	371	..	371	4,751	5,122	2	..	2	horse	..	..	..	"	..
Landslip, Landslip, Waikaia	Brown, R. ..	16	"	1	18′	8′	..	levels & headings	1	..	..	ditto	8,237	..	8,237	16,731	24,968	..	10	10	steam	steam-driven	..	..	"	18/5/07
Kyle's, Landslip, Waikaia ..	Kyle, W. (permit)	4	"	1	10′	all	1 in 8	ditto	..	6 x 4′	..	adit	1,882	..	1,882	2,924	4,806	..	5	5	hand	oil engine and pump			"	18/5/07
Rossvale, Landslip, Waikaia	McLelland, J. ..	4	"	1	10′	6′	..	bord and pillar	..	6′ x 5′	..	"	5,324	..	5,324	3,718	9,042	..	6	6	horse	..	..	..	"	18/5/07
Monaghan's, Landslip, Waikaia	Bond, J. (permit)	3	"	1	7′	all	..	levels & headings	..	6′ x 4′	100′	"	271	..	271	2,677	2,948	..	2	2	hand	..	..	..	"	18/5/07
Muddy Terrace, Landslip, Waikaia	Junker, F. A. (permit)	5	lignite & shale	1	17′	10′	..	bord and pillar	..	..	..	dip	1,484	..	1,484	8,244	9,728	1	2	3	horse	..	..	..	"	17/5/07
Argyle, Upper Waikaia ..	Baxter, J. and T.	16	lignite	1	10′	all	..	open	..	..	..	open	236	..	236	3,005	3,241	1	..	1	hand	..	..	..	..	..
Beer's, Mossburn	Beer, Mrs. T. (owner)	5	"	1	..	..	..	"	..	..	..	"	193	..	193	166	359	2	..	2	"	..	..	..	..	..
Mataura Coal-mine, Mataura	Mataura Collieries (Ltd.); J. A. Yule (secretary), Gore	11	"	1	17′	all	..	"	..	..	..	"	8,145	..	8,145	94,456	102,601	6	..	6	horse	drainage tunnel			..	2/8/07
Mataura Lignite Mine, Mataura	Coster, W. ..	31	"	1	17′	"	..	"	..	..	..	"	8,162	..	8,162	58,742	66,904	6	..	6	"	centrifugal steam		driven	..	2/8/07
Waimumu, Waimumu ..	Williams, W. J. (permit)	8	"	1	10′ 6″	7′	..	bord and pillar	..	..	..	leve	4,368	..	4,368	20,095	24,463	5	4	9	"	..	..	..	natural	2/8/07
Tuach's, Waimumu ..	Tuach, John ..	1	"	..	..	..	..	open	..	..	..	open	12	..	12	..	12	..	..	..	"	..	..	..	..	..
Ota Creek, Wyndham ..	Genge, E. ..	27	"	1	6′	all	..	"	..	..	..	"	350	..	350	13,174	13,524	1	..	1	"	..	..	..	..	31/7/0/7
Genge's, Wyndham ..	Genge, E. ..	3	"	1	..	..	..	"	..	..	..	"	100	..	100	912	1,012	1	..	1	"	..	..	..	..	31/7/07
Ferry Road, Wyndham ..	Greene, M. ..	1	"	1	11′	all	..	"	..	..	..	"	539	..	539	..	539	2	..	2	"	Dean steam pump			..	31/7/07
Clarke's, Wyndham ..	Clarke, S. ..	1	"	1	8′	"	..	"	..	..	..	"	2,326	..	2,326	..	2,326	2	..	2	"	centrifugal pump			..	31/7/07
Robin Hood, Pine Bush ..	Couser, William	26	"	1	15′	"	..	"	..	..	..	"	170	..	170	2,489	2,659	1	..	1	"	..	..	..	..	1/8/07
Graham's, Fairfax	Graham, P. S. ..	29	"	1	5′ 6″	"	1 in 20	bord and pillar	..	..	6 ch.	adit	365	..	365	15,776	16,141	..	1	1	hand	..	..	..	natural	..
Ardlowie, Fairfax	Poole, E. ..	5	"	1	..	"	..	open	..	..	..	open	85	..	85	425	510	1	..	1	"	..	..	..	..	..
Speybank, No. 2, Fairfax ..	Smith, William ..	1	"	1	..	"	..	"	..	..	..	"	412	..	412	..	412	2	..	2	"	..	..	..	..	..
Nightcaps, Nightcaps ..	Lloyd, J. ..	26	brown	3	36′ in aggregate	24′ in aggregate	variable to 1 in 7	open and bord and pillar	3	4′ x 4′ 4′ x 4′ 6″ 5′ x 5′	32 ch.	open and adit	49,337	..	49,337	518,439	567,776	32	62	94	steam and horse	syphon			fan	11/12/07

Hit or Miss, Nightcaps ..	Tinker, W. (permit)	7	brown	1	..	..	..	bord and pillar	..	..	..	adit	1,381	..	1,381	2,450	3,831	1	3	4	horse	..	..	..	natural	7/6/07
H.B., Nightcaps	Spence, G. R. (permit)	9	"	1	6′ 6″	all	..	..	..	..	..	..	816	..	816	4,845	5,661	..	2	2	hand	..	..	..	"	7/6/07
Morley, Nightcaps	Spence, G. R. ..	4	"	1	..	"	..	open	..	..	..	open	115	..	115	3,858	3,973	2	..	2	"	..	..	..	..	7/6/07
McBride's, Nightcaps ..	McKenzie, D. (permit)	7	"	1	10′	"	..	..	..	..	..	..	805	..	805	4,812	5,617	1	2	3	"	..	..	..	natural	..
New Brighton, Nightcaps ..	McKenzie, D. ..	½	"	1	..	"	..	..	..	..	..	..	70	..	70	..	70	1	2	3	"	..	..	..	"	..
The Willow, Nightcaps ..	Clark, John ..	8	"	1	14′	"	..	open	..	..	..	open	326	..	326	1,801	2,127	2	..	2	"	..	..	..	..	23/9/07
Manuka Hill, Nightcaps ..	Groves, G. ..	3	"	1	..	..	..	"	..	..	..	"	832	..	832	264	1,096	4	..	4	"	..	..	..	..	23/9/07
Hogan's, Orepuki	Hogan, C. ..	3	lignite	..	..	..	..	"	..	..	..	"	..	..	..	20	20	..	..	..	"	..	..	..	..	..
Bush Siding, Seaward Bush	Bowden, F. ..	5	brown	1	120′	all	..	"	..	..	..	"	942	..	942	3,198	4,140	4	..	4	horse	..	..	..	..	..
Clifton, Clifton	Gillies, T. ..	6	"	..	..	..	..	..	..	..	..	..	..	..	..	297	297	..	..	..	..	..	..	..	..	..
Private Pits.																									
Waverley Park, Pukerau ..	Milne, James ..	6	lignite	1	7′	all	..	open	..	..	..	open	6	..	6	24	30	1	..	1	..	..	..	..	..	..
Mason's, Pukerau	Mason, A. M. W.	6	"	1	7′	"	..	"	..	..	..	"	24	..	24	106	130	1	..	1	..	..	..	..	..	..
Glover's, Pukerau	Glover, Thomas ..	10	"	1	7′	"	..	"	..	..	..	"	40	..	40	159	199	1	..	1	..	..	..	..	..	..
Smith's, R., East Gore ..	Smith, R. ..	6	"	1	14′	"	..	"	..	..	..	"	..	..	..	44	44	..	..	..	..	..	..	..	..	..
Smith's, H., East Gore ..	Smith, H. ..	5	"	1	7′	"	..	"	..	..	..	"	..	..	..	47	47	..	..	..	..	..	..	..	..	..
Cross's, Otama	Cross Bros. ..	9	"	1	4′	"	..	"	..	..	..	"	..	..	..	169	169	..	..	..	..	..	..	..	..	..
Perkins's, Wendon Valley ..	Perkins, G. A. ..	6	"	1	7′	"	..	"	..	..	..	"	9	..	9	48	57	1	..	1	..	..	..	..	..	..
Blackmount, Blackmount ..	Studholme, P. ..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	58	58	1	..	1	..	..	..	..	..	..
Linwood, Te Anau	Tourist Department (owner); late D. Ross and Co.	7	lignite	..	..	..	..	"	..	..	..	"	80	..	80	770	850	1	1	2	..	..	..	..	..	..
Wyndham, Wyndham ..	Irvine, D. ..	12	"	1	..	all	..	"	..	..	..	"	3	..	3	325	328	1	..	1	..	..	..	..	..	..
Mount Linton, Nightcaps ..	Gates & McGregor	13	brown	1	10′	8′	..	"	..	..	..	"	..	..	..	644	644	..	..	..	..	..	..	..	..	..
Output of mines included in 1906 statement, but whose operations are suspended	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1364941	1364941	..	..	..	..	..	..	..	..	..
Totals, Southern District, Middle Island	..	..	..	..	..	..	..	..	..	..	..	..	376,765	85,245	462010	7482898	7944908	328	787	1115						
Totals, West Coast District, Middle Island	..	..	..	..	..	..	..	..	..	..	..	..	798,152	253,870	1052022	11464598	12516620	691	1467	2158						
Totals, North Island	..	..	..	..	..	..	..	..	..	..	..	..	282,809	34,168	316977	4144094	4461071	124	513	637						
Grand Totals ..	..	..	..	..	..	..	..	..	..	..	..	..	1457726	373,283	1831009	23091590	24922599	1143	2767	3910						

Add output of following eleven mines, included in previous statement but now abandoned: Motupipi, 360 tons; Westport-Wallsend, 3,441 tons; Waimangaroa, 17,307 tons; Wellington, 2,299 tons; Inkerman, 2,665 tons; Inglewood, 314 tons; Devil's Creek, 343 tons; Inangahua, 71 tons; Murray's Creek No. 2, 450 tons; Burke's Creek, 300 tons; Reefton, 36 tons: total	27,586
Output of mines included in statement for 1890, but whose operations were suspended prior to 1890 (less three, which are again included in body of statement—namely, Hill's Creek, 779 tons; Lovell's Flat, 323 tons; Wyndham, 1,988 tons: total, 3,090 tons)	132,732
Output of mines included in former statements, but whose operations were suspended prior to 1889	172,529
Output of Waikaka, Adam's Flat, and Waimea Mines, inserted twice in statement for 1891	6,518
	25,261,964

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