1899.

NEW ZEALAND.

INSPECTION OF COAL-MINES REPORT.

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

No. 1.

Mr. GEORGE WILSON, Inspecting Engineer, to the UNDER-SECRETARY for MINES.

Mines Department, Wellington, 6th April, 1899.

SIR,—

I have the honour to forward you covering report on the progress of the coal-mining industry for the year ended the 31st December, 1898.

The output of coal from the mines throughout the colony for the past year amounted to 907,033 tons, being an increase on the previous year of 66,320 tons. The output comprised 538,477 tons of bituminous coal, 36,432 tons of pitch-coal, 298,365 tons of brown coal, and 33,759 tons of lignite.

Mining operations were carried on in 177 mines, in connection with which 2,003 men were employed, the average output being 453 tons per man per annum. One fatal accident, due to the negligence of the deceased, occurred during the year. The Act and regulations are strictly adhered to in most of the mines.

I have, &c.,

GEO. WILSON,
Inspecting Engineer.

The Under-Secretary, Mines Department, Wellington.

No. 2.

Mr. JAMES COUTTS, Inspector of Mines, to the UNDER-SECRETARY for MINES.

Inspector of Mines' Office, Thames, 14th March, 1899.

SIR,—

I have the honour to transmit to the Hon. the Minister of Mines the following report on the coal-mines in the Auckland District, in compliance with section 67 of "The Coal-mines Act, 1891," for the year ending the 31st December, 1898:—

KAWAKAWA.

The New Bay of Islands Mine.—This mine was continuously worked during the year, and gave employment to one man above ground and fourteen men below. The work has been chiefly confined to taking out pillars of coal on the extreme outcrop. The output of coal for the year ending 31st December, 1898, was 10,622 tons, being a decrease of 512 tons compared with the previous year. A letter, dated 25th January, 1899, has been received from Mr. D. J. Kirkpatrick, secretary for the company, stating that the coal where they have been working is nearly exhausted, and that the company would cease operations about the end of the month of January, 1899. No accidents.

Russell's, or what has been named the "Bay of Islands Consolidated Coal-prospecting Syndicate."—In the early part of the year boring operations were carried on to some extent by this syndicate on the west side of the township, in the swamp, and on the western side of the river, opposite the old Bay of Islands Company's No. 3 shaft. The first hole was put down a depth of 60 ft., when some hard rock was met with, which broke the chisel, and it was found necessary to abandon this bore-hole. A second bore-hole was then put down a few feet to the westward of No. 1 bore-hole, and a depth of 70 ft. had been attained when something was found, which Mr. Russell considered was the edge of the seam of coal where it had thinned out to a mere seam. The No. 3 bore-hole was put down 42 yards to the west of No. 2 bore-hole, and 5 ft. of hard coal was passed through at a depth of 90 ft. No. 4 bore-hole was put down at a distance of 110 yards west of No. 3 bore to a depth of 136 ft., and at 129 ft. from the surface a seam of coal 2 ft. 4 in. was cut through. The seam of coal cut through in No. 3 bore-hole might be considered a sufficient thickness to warrant an outlay of money to open up a mine, provided there was some extent of coal to work out, and it was situated above water-level; but in this case the coal met with in the other three bore-holes is disappointing, and the places where the bore-holes have been put down are in a swamp, and are frequently flooded in winter-time; therefore the prospects of working the coal that has so far been discovered here to pay are not of an encouraging nature.

Hikurangi Coal Company.—This company has successfully carried out the works that were in progress at the end of the previous year, and are now engaged in opening up a low level to the dip of the main adit. An incline has been sunk on the coal towards the Government railway, and a level is now being driven in a southerly direction, which will enable the company to procure a large quantity of coal at a reasonable cost, as there is very little water to contend with the distance that has been sunk. The coal that has been won from the mine has been of very fair quality, and has found a ready market. The mine was inspected twice during the year. The ventilation was good on each occasion, and the mine safe. The output of coal for the year 1898 was 32,973 tons, an increase of 2,310 tons compared with the previous year. Only one slight accident happened in this mine during the year.

Phœnix Mine.—The operations in this company's mine have been very limited. Six men were employed in the mine up till the 4th November, when it was closed down, the price of coal being so low that the money received for it was not sufficient to pay expenses. The output of coal for 1898 was 1,800 tons, being a decrease of 3,226 tons compared with the previous year.

West Bryan's Mine.—No work has been done in this mine during the year, with the exception of what was taken from the outcrop for Mr. Smith's own use.

Hikurangi Colliery.—The operations in this company's mine are being pushed on, but are still confined to opening up the seam of coal on the outcrop, near the top of the leading spur. The surface of the ground above the coal that is at present being worked is of a broken character, and wherever a depression appears on the surface the coal underneath those places, being near the surfaces, is affected either by faults, or the coal is softer than it is under the ridges that are of a uniform grade. The seam is from 6 ft. to 12 ft. in thickness, but in places there is a seam of fireclay in the centre of the seam varying from 1 in. to 1 ft. 8 in. thick, which, in consequence, causes the top or bottom portion to be worked separately, and this gives considerable trouble in keeping the coal as it is broken out free from the fireclay getting mixed with it, which affects its appearance, and decreases its value in the market. The ventilation was good and the workings safe when last inspected. There were twenty-two men employed in and about the mine. The output of coal for the year 1898 was 11,937, being an increase of 7,453 tons over the previous year. No accidents.

Whangarei.

New Kamo Mine.—The work in this mine is still limited, being confined to taking out pillars in the 3 ft. or upper seam, near the outcrop. The coal that is at present being worked is much better than it was last time I visited the mine. The ventilation was good, and the workings safe, and carried on satisfactorily. The output of coal for the year 1898 was 968 tons, being a slight decrease of 69 tons compared with the previous year. Five men were employed. No accidents.

Ngunguru.

Kiripaka Colliery.—The operations in this company's mine have during the year been more directed to opening up the mine to the dip, and they have succeeded in developing some very good coal. The seam in this section of the mine will average 6 ft. in thickness, from which a fair quantity of coal is being produced. In the upper workings several bords are in progress, but the seam of coal in most of the places is only from 3 ft. to 4 ft. in thickness. There are also some men employed in taking out pillars, which is being done very efficiently, without losing much coal. The output of coal for the year 1898 was 15,840 tons, being a slight decrease of 408 tons compared with the previous year. The total number employed above and below ground has been, on an average, forty-nine men. Two slight accidents occurred in the mine.

Callaghan's Mine.—John and William Callaghan and George Climo have commenced to open up a coal-mine on the Kiripaka Block (No. 3A). There has been a considerable amount of work done on this block of land in the shape of trenching, &c., to discover the extent and area of ground in which a fair thickness of coal exists, and the owners are satisfied with the prospects met with, being of opinion the seam of coal will pay handsomely to work. Operations have been commenced near the top of the hill, on the opposite side of the river from the Ngunguru Coal Company's mine. An opencast has been put in the side of the hill for a distance of 40 ft., and a drive at the end of the opencast is in 10 ft. At the end of the drive there is a seam of coal 6 ft. in thickness showing, and I am informed it increases in thickness as it dips into the hill. The face of the drive is on Crown land, but I am informed it is within a few feet of Callaghan's boundary, and that the Warden gave them permission to go in to work their mine at the place mentioned. Five men were employed in the construction of an incline tramway down the side of the hill from the mine to the river, a distance of 18 chains, which will be used for the purpose of conveying the coal down to the loading-ground.

Waikato.

Waikato Colliery Company.—This company has opened up during the year a section of coal in their mine on the eastern side of what may be termed the "old workings." This has been connected by a straight bord that has been driven from the main cross-cut and has given every facility for working the coal lying in this direction. The coal that has been opened up in this new block is of excellent quality, and several bords are now being pushed ahead into this block, which is considered to be intact for some distance. The pillars are also being operated upon according to the demand, and there appears to be no difficulty in supplying their customers. With the exception of one place, which was to be attended to, the ventilation was good and the mine safe. The output of coal for the year 1898 was 12,871 tons, being a slight decrease of 446 tons compared with the previous year. Nine men were employed above ground and twenty-one below, but the men have not been employed full time on account of the demand for the coal not being quite as good as the two previous years. Three slight accidents occurred in this company's mine.

Taupiri Extended.—This company's mine has been steadily worked during the year, and although the output has not been as large as the previous year, yet the manager is sanguine that the year 1899 will be more prosperous, and is vigorously pushing on prospecting-works in the shape of boring on the property to the north of No. 2 shaft, and also extending a cross-cut drive at the low level for the purpose of opening up a section of coal to the north of the present workings, which has been proved by boring to contain a large quantity of coal that will pay to work. Operations on the coal are proceeding as usual. The level and headings are taken in about 7 ft. high, and the bords from 16 ft. to 24 ft. in height, and, as the seam is from 20 ft. to 50 ft. in thickness, there is ample coal left in on the roof to keep the mine secure. Bore-holes are also put up every 5 yards in the roof of the workings to ascertain if not less than 9 ft. of coal is left in on the roof. The ventilation in the mine is good, and on our last visit everything in connection with the mine was in good order, and safe. The output of coal for the year ending 1898 was 28,721 tons, being a decrease of 5,192 tons compared with the previous year. There were seven accidents in the mine, none of which may be considered of a serious nature. There were seventy-seven men employed in and about the mine the first six months of the year, but this number has been reduced to ten men above ground and twenty-eight men below.

The Taupiri Reserve.—The operations in this company's mine are directed in opening up the low level from the bottom of the incline shaft. The main level is being driven in a south-westerly direction under Lake Kimihia. The seam continues about its average thickness, and from 8 ft. to 16 ft. in height is being taken out in the level and bords. The coal is softer in some of the bords than could be desired. Still, I am informed the seam at this level is opening up even better than was at first anticipated. The manager has been making considerable improvements on the screens on the bank-head for screening the coal, which will be the means of effecting a great saving in labour, and by working the mine with economy he is sanguine of making the mine pay during the year that has been entered upon, if nothing unforeseen happens. The output of coal for the year 1898 was 15,874 tons, a slight decrease compared with the previons year. The ventilation in the mine was good, and the mine safe. Eleven men were employed above ground and twenty-nine below. There were seven accidents happened in this company's mine in the early part of the year, but none of a serious character.

Ralph's Taupiri Coal-mine.—This company resumed operations in their mine in the month of May last, and commenced to put coal on the market about the end of the following month, and for the six months ending the 31st December, 1898, succeeded in disposing of 12,725 tons of coal. The operations in the mine are confined to working the coal in that portion of the company's property under the bed of the Waikato River. The shaft is only 190 ft. in depth, but as the seam is 65 ft. thick, and from 7 ft. to 20 ft. of the coal from the bottom of the seam only is taken out, it leaves a great thickness of coal overhead, apart from the covering on the top of the coal; and the manager has been instructed to use every precaution, by putting bore-holes 9 ft. up into the roof every 5 yards in the headings and bords, to ascertain if the seam is thinning out, and also to prevent, if possible, not less than 9 ft. of coal being left overhead whilst working under the bed of the river. The coal, of the kind, is of an excellent quality, and the prospects of the company are encouraging. The ventilation was good and the mine safe when last inspected. Ten men were employed above ground and forty men in the mine. A miner named James Evans met with a slight accident, getting his hand jarred.

Mokau Mine.—This mine was worked in the early part of the year by a syndicate or company, but as it did not prove a payable concern, and as there was some difficulty about money to carry on with, work in the mine was stopped for three months, and at the end of that time another syndicate made arrangements to work the mine, who, I am informed, are so far more successful in making it pay. The s.s. "Douglas" is running direct to the mine, making from four to six trips a month, and carrying from 70 to 90 tons of coal each trip. When the mine was inspected on the 17th November ten men were employed in and about the mine. This mine has not been worked as well as could be desired. The pillars are too small, more especially as the seam of stone (or fireclay) in the centre of it, which varies from a few inches to 1 ft. in thickness, fritters away when exposed to the air. The ventilation also was not as good as required, but William Tattley, jun. (the new manager) promised to have those matters rectified with as little delay as possible. The output of coal for the year 1898 was 3,395 tons, being an increase of 247 tons compared with the previous year.

Fernside Mine, Mokau.—This is a new mine that has been started during the year, and is situated about half a mile up the river from the Mokau Coal-mine. A level has been driven in from the side of the hill on the coal for a distance of 400 ft., and the seam has varied from 3 ft. to 5 ft. 6 in. in thickness. Very little timber is required, as the roof is good. The manager has now commenced to drive a back heading on the coal to procure ventilation, which he expects to complete in the course of a few weeks. There are only three men employed yet, but they are sending away now about 150 tons of coal a month. The output of coal last year was 657½ tons.

Bombay Mine.—There has been very little work done in this mine during the year, only 6½ tons of coal being obtained in the early part of the year, and operations ceased in the month of April last. The output of coal for the year being 6½ tons, was a decrease of 18½ tons compared with the previous year.

Accidents in Coal-mines.

5th January.—Taupiri Reserve: A miner named Herbert Tribe cut his foot with an adze.

21st February.—Taupiri Extended: Thomas McQuillam received an injury to his leg by a piece of coal.

22nd February.—Taupiri Reserve: Robert Muir had his eye injured by a piece of coal that flew from the pick.

8th March.—Taupiri Reserve: Jonathan Columbine had his side injured by falling on a truck.

15th March.—Taupiri Extended: John Kay sprained his ankle.

25th March.—Taupiri Reserve: George Waugh had his eye injured by a piece of coal.

30th March.—Ngunguru Mine: John Rivers had his fingers injured—crushed by a piece of coal falling on them.

1st April.—Taupiri Reserve: Richard Johnstone had his fingers injured by being caught in the coupling-chain of the mine-trucks.

4th April.—Taupiri Reserve: George Pearce had his fingers injured whilst spragging a truck.

11th April.—Taupiri Reserve: James Hardwick wrenched himself in lifting a loaded truck on the road.

3rd May.—Taupiri Reserve: Nesbitt Mackie received an injury to his face and arms by a slight explosion of powder caused by his lamp falling down when he was making a cartridge; a spark flew and ignited the powder.

5th May.—Taupiri Reserve: Arthur Neil injured his hand whilst in the act of driving a wedge in the handle of the pick.

2nd June.—Taupiri Extended: Samuel Taylor received an injury to his eye by a piece of coal.

3rd June.—Taupiri Extended: William Brocklebank received an injury to his hand; only three days off.

11th June.—Taupiri Extended: Francis Murray had his hand injured by a jar.

2nd July.—Hikurangi Coal-mine: J. W. Shoadley had his eye injured by a piece of coal.

11th July.—Kiripaka Mine: George Climo had his wrist injured.

12th July.—Taupiri Extended: Joseph Shore was, with others, sending trucks down a self-acting incline when some of them neglected to couple the trucks. Four of the trucks ran down the incline and came in collision with the empty truck at the bottom, which was attached to the hauling-rope, which had the effect of tightening the rope, which sprang up and struck Shore, breaking his arm between the shoulder and the elbow.

27th July.—Kiripaka Mine: C. Rider slipped and twisted his knee.

6th August.—Taupiri Extended: Thomas Flay had his knee slightly injured.

12th August.—Ralph's Taupiri Mine: James Evans had his hand jarred.

6th September.—Waikato Mine: J. Green, jun., was slightly injured by a little loose powder that ignited, no doubt through carelessness.

11th October.—Waikato Mine: W. Wallace, jun., had his fingers slightly crushed.

23rd October.—Waikato Mine: G. Watkins strained his back lifting a truck on the road.

9th November.—Taupiri Extended: Thomas McQuillan received a bruise by being knocked over with the horse in the mine.

23rd November.—Taupiri Extended: William Smith met with an accident which appeared not to be of a serious nature at first, but it has laid him up for sixty-nine days, and he has not recovered yet. His mate and himself had been working in the face of their bord too close together, when by some means his mate struck him by accident with his pick on the knee.

There were twenty-six accidents reported during the year, but none fatal, nor yet any of a very serious character.

REMARKS.

The output of coal from the mines in this district amounted to 148,390 tons, an increase of 8,383 more than the previous year.

	Output for 1898.	Output for 1897.	Increase.
North of Auckland	74,140	70,734	3,406
South of Auckland	74,250	69,273	4,977

As the railway has now been opened to the Thames the output of coal from the Waikato mines should be considerably increased in 1899.

I have, &c.,

JAMES COUTTS,

The Under-Secretary, Mines Department, Wellington. Inspector of Mines.

No. 3.

Mr. ROBERT TENNENT, Inspector of Mines, Westport, to the UNDER-SECRETARY for MINES.

SIR,— Inspector of Mines' Office, Westport, 31st March, 1899.

I have the honour, in compliance with section 67 of "The Coal-mines Act, 1891," to report as follows on the West Coast coal-mines for the year ending 31st December, 1898:—

Puponga Coal-mine, Collingwood.— (10/1/99): The formation of a surface tramway is the only work in progress, and it will take a considerable time to complete. The neglected condition of the mine shows that no work has been done in that direction. Near the entrance of the mine the timber is broken down, thus cutting off all means of egress. Outcrops on the opposite side of the creek are exposed at two places, but from what can be seen they are simply parcels of coal slipped away from a higher elevation. When visited there was no person at the mine, but on my return Mr. Taylor was met. The prospects of this mine must be in the far future.

Pakawau Coal-mine.—(10/1/99): Work has ceased at this mine, in view of laying down a surface tramway to convey the coal from the present binns to the loading-station at the ocean-beach. The coal has been mined from two levels running at about right angles to each other, but not connected. The property bears the marks of neglect, and the mines are unfit for any person to travel into. Owing to the broken-down state of the face no accurate data of the coal could be got. When visited there was no person on the property.

Enner Glynn Coal-mine, Nelson.—(29/6/98): At this mine operations have ceased owing to a gob which originated by the spontaneous combustion of coal slack that was accumulated behind the logging in No. 1 pass. After all efforts to extinguish the fire were ineffective it was decided to raise all movable material to the surface and flood the mine, which was accordingly done. (30/6/98): The water had risen in the shaft to within 50 ft. of the surface when orders were given to batten down and fence off the shafts. (9/1/99): Shafts still battened down, nothing further having been done to reopen the mine.

Mokihinui Coal-mine.—Mining operations still continue to be suspended on this property.

Cardiff Colliery.—(21/11/98): The output for the year was 60,101 tons, being an increase of 5,821 tons on the preceding year. The coal up to the present has been chiefly mined from the Hector Block, which forms the eastern section of the coalfield, but towards the end of the year it was found necessary to extend the workings across Chasm Creek to the western block, which necessitated the construction of a bridge. The bridge thus adopted has a span of 200 ft., and is built with a rising gradient of 1 in 4. It consists of an inverted parabolic bowstring truss, framed of black-birch timber, rested on two cables, each composed of two 5 in. circumference wire ropes, having a combined breaking-strain of 336 tons, or over six times the dead-weight of the truss. The ropes are securely anchored to timber balks let into the solid sides and bottom of the drives at either side of the creek. At the lower end each rope is attached to a 3·5 in. diameter tension-screw, capable of raising the structure should adjustment be necessary at any time. The depth of the truss at the greatest sag of the cables is 20 ft., and the greatest height above the creek 98 ft. The strain is chiefly borne by the cables, the truss itself being lightly built, sufficiently strong to give rigidity to the structure. From the arrival of the ropes the work of erection occupied six weeks, all the pieces being previously fitted together at the works. The cost of tunnels and approaches on either side of the creek was £1,000. The coal is conveyed over the bridge on a double line of tramway by means of a self-acting endless rope, the speed of which is regulated by a powerful screw-brake. The structure has an imposing appearance in the gorge. It possesses rigidity, and answers the purpose admirably. During the year the company has spent £500 in prospecting this lease by means of borings, headings, and trenching, and have proved the existence of a large area of coal of the finest quality. The works are under the direct supervision of Mr. Broome, mining engineer for the company, who has exercised every precaution for safety to miners and economy in carrying out the various development-works undertaken by him. The provisions of the Act are strictly enforced and carried out. Seven visits were paid. William Bird, stone-drive contractor, sustained a fracture of right leg whilst raising a heavy cap-piece.

Millerton Colliery.—(30/11/98): The gross output from this colliery during the year was 87,269 tons, being an increase of 28,028 tons on the preceding year. Of this total, two-thirds was produced from five Leyner's and three Yock's coal-cutting machines of the percussion type, actuated by compressed air. The compressing plant by Leyner (Denver, Colorado) consists of two separate engines of equal volume, each having 17·5 in. diameter steam- and air-cylinders, with 12 in. diameter compound air-cylinder. These compressors are worked alternately as required, one being equal to keep full working pressure on all underground machinery during working-hours. From the practical results of these holing-machines, together with the safe and suitable application of compressed air as a motive-power, also the ventilating of prospecting headings of great lengths on steep gradients, this power has proved a valuable factor in economizing mining operations. Since the introduction of holing-machines they have been confined to the east or dipside of the main haulage-road. This coal being of average hardness makes it suitable for this class of work. With the object of breaking down the coal without the use of explosives two hydraulic cartridges have been imported, and Mr. Brown informs me that he is hopeful of their success. The west or rise-workings are being steadily cut off by a main upthrow fault, the total displacement of which has not yet been determined from any other point of the coalfield. During the year developments have been directed to open out the large coal-basin in the neighbourhood of Mine Creek. Its situation being considerably elevated above the present workings, it was decided to convey the coal down a heading having a gradient of 1 in 3, which will connect the new mine with the present haulage. This heading when completed will exceed 30 chains, a great part of which will be rock-cutting. From reliable information, seven smoke-jackets have been ordered by the Westport Coal Company for the use of the collieries, in case a fire should occur at any of their mines—three for Millerton and four for Denniston collieries. Timbering and spragging are strictly and carefully carried out by the company's officers. Reports and other provisions of the Act up to date. No accidents reported. Air-measurement, 16,500 cubic feet per minute. Four inspections made.

Coalbrookdale Colliery.—(23/12/98): This group of mines comprises the Cascade, New Mine, Muncie's, and Big Dip. The three latter are pillar districts. In the Cascade section a 12 ft. down-throw fault that traverses the whole area was met with, together with a thinning of the coal seam, which terminates the workings westward. These faults have done much to retard the progress of this extensive coal area. With the object of cutting and winning the coal at the most central position from the deeper basin behind this downthrow fault, it was found necessary to extend the haulage-road on a deviation from the original line at a given point. This formation of roadway to the deeper coal is completed, and a connection is also made with the drainage-channel. It is anticipated that developments will be extended towards this part of the mine at an early date, in view of meeting the winter demand. As formerly reported, the ventilation system has received careful attention, and separate and direct air-currents sweep the workings. The air-measurement is 28,000 cubic feet per minute. The timbering and spragging are carefully carried out. Muncie's and New Mine: This combined district is confined to the extraction of pillars from the same area. Much depends on the nature of the roof for the safe and profitable extraction of pillars. This district is favourably situated, and the roof is a strong sandstone, and under these conditions,

together with the practical and systematic order in which the pillars are removed, the risk to life and property, and the loss of coal, are reduced to a minimum. Timber is plentifully and freely used. Big Dip: The coal from this district is exhausted, and all movable material is removed. Alexander Nicol, an authorised shot-firer in the Cascade east district, met with an accident, which terminated fatally, from an explosion of blasting-powder that he was carrying loose in a tamping-box, although this was strictly against official orders. Five inspections were made.

Ironbridge Colliery.—(22/12/98): Since the Flat-seam and Gentle Annie pillars were abandoned, operations have been confined to the solid workings of the Cedar seam, from which the total output is produced by Morgan and Gardiner's electric coal-cutting machinery of the percussion type. As a proof of the satisfactory results obtained from the coal-cutting machines in use at this colliery the company has lately doubled the number of machines of their working-plant. This has removed a disadvantage that was attended by loss of time in shifting the machines from face to face. To meet the requirements of the output the work of the machines is distributed over three shifts—namely, six on afternoon- and night-shifts and four on day-shifts. The work is now of a more simple character, the men having become better educated to it. Owing to a number of faces being cut off between a reverse fault and the outcrop the management has decided to extend operations across Cedar Creek. To facilitate and vigorously push forward the work a heading is being driven in three shifts by means of machinery. The outcrop will be cut at the most advantageous point to the bridge, and will at the same time form an approach. The ventilation system has recently undergone a complete renewal by the erection of a Schiele fan driven from a 4 ft. diameter Pelton under a pressure of 90 ft. It is built on Cedar Creek, at the outlet of a heading that connects with the working-faces. Thus a direct air-current, measuring 16,500 ft., is circulated. The timbering and spragging of workings of this district are entirely carried out by the company's officers, and it is strictly and carefully done. No accidents reported. Reports up to date. Five inspections made.

Langford Coal-mine.—Since the No. 1 Buller dredge was laid aside for repairs operations at this mine have ceased. The supply of coal to this dredge was the chief outlet of the mine.

Whitecliffs Coal-mine.—Work has ceased at this mine.

Flaxbush Coal-mine.—Work at this mine has also ceased.

Coal Creek Coal-mine.—This mine has been worked very irregularly, employing only one man. The coal is mined to supply the Exchange dredge, Three-channel Flat.

Golden Treasure Coal-mine.—(9/12/98): This lease, held by John Davidson, employs two men, who sluice off the top and break out the coal in the open face.

Murray Creek Coal-mine.—(9/12/98): This lease, held by James Sara, adjoins the Golden Treasure. The coal is of good quality as a household fuel, and is worked in a very satisfactory manner.

Phœnix Coal-mine.—(9/12/98): The workings of this mine have been confined to the rise boundary of the lease. The coal being of great thickness, the workings are safe, and little timber is required. Ventilation good. Reports kept. Four men employed. Four inspections.

Murray Creek Coal-mine.—(10/12/98): William Lamberton, the owner, has ceased work at the Rise Mine. He is extending a prospecting drive along the line of a main fault, where the coal is of a harder nature. A second outlet provides good air. Reports to date. One man employed. Four inspections made.

Inkerman Coal-mine.—(7/2/99): The Inkerman Gold-mining Company employ two miners to supply coal for their rock-drill machinery at the low-level tunnel, Rainy Creek. During my visits to the gold-mines work had ceased, and, in consequence of the water being up on the bottom levels, no inspection was made.

Devil's Creek Coal-mine.—(7/12/98): This mine, situated on the Progress Road, has recently been opened from an outcrop. The seam has a vertical position, and measures 8 ft. in thickness.

Breen's Coal-mine.—(8/12/98): The coal was chiefly won by the splitting of small pillars; but, as the owner is not an experienced miner, and the work is of a dangerous character, I gave him instructions to cease operations in that part of the mine, which was accordingly done.

Progress New Mine.—(8/12/98): The Progress Mines Gold-mining Company has recently opened out a 6 ft. seam from an outcrop on the opposite side of the terrace from the old mine, to supply coal for the machinery at the Progress Mines. Thomas Cochrane has contracted to supply the coal at a certain rate per ton. The quality is well suited for steaming purposes.

Beckford Coal-mine.—(8/12/98): Work has ceased at this mine.

Bourke's Creek Coal-mine.—(8/12/98): This mine, owned by Cairns and McLever, is situated on Midland Railway reserve, about two miles inland from the main road. The coal being a favourite domestic fuel, it is loaded into bags at the mine, and conveyed on an open trolly over a tramway to a siding, where it is loaded into drays. The seam is opened by two levels about 150 ft. in, which are connected at regular intervals, and provide good air. Reports to date. The coal is 14 ft. in thickness, and part of it is left for a roof. The work is safe.

Waitakere.—Coal for household purposes is still dug from this open deposit of lignite.

Blackball Colliery.—(12/12/98): At this colliery the output steadily increases, but as the carrying capacity of the aerial tramway is limited to about 230 tons per day of eight hours, the developments are confined to the production of this supply. Since mining operations were commenced this coalfield has borne an almost unbroken character with respect to faults; thus facilities are afforded to carry on operations on a regular and systematic basis. The principal difficulty to contend against is a weak roof; but, notwithstanding this difficulty, owing to the strict discipline, together with the regular system of timbering that is adopted throughout the mine, its safety may be classed as one of the first in this district. Attention has of late been directed towards winning the coal from the top seam, which is a hard bright coal 4 ft. in thickness, with a strong sandstone roof. As it was not practicable to work the two seams separately, owing to the thinness of the intervening strata, it was ultimately decided to draw the timber in the bottom-seam bords after they were holed on the

inclines, and to allow the roof to fall. In this way the top coal over the bottom bords is made ready to be taken down and filled away. In the bottom west level a roll on the pavement was met, which made it necessary to cut down the floor for a considerable distance, so as to maintain level to the bottom of the coal, in view of keeping a uniform grade for the future extension of the engine-haulage. At present preparatory work is being pushed forward to extend the haulage 600 ft. on this level. Originally the surface chimney of the ventilating-furnace was built with wood, which was taken down during the year, and rebuilt with brick to a height of 35 ft. This addition to the heated column has increased the air-volume 2,000 ft., which gives an average air-measurement of 16,500 cubic feet per minute. The principle of ventilation is a direct air-current. No return airways are required. Mine reports kept to date. Warning and signal boards placed at all stations. No accidents are reported. Four inspections.

Brunner Colliery Dip Mine.—(13/12/98): The chief source of supply is from the removal of pillars, which are worked from both sides of the engine haulage-road. During heavy rains considerable expenditure was incurred in baling from the bottom dip to the pumps on account of the large inflow of water that percolated through the broken overlying strata, a trouble which is common in this district after pillars are exhausted. However, as the workings advanced towards the pumps this extra cost was dispensed with, as the pumps were capable of dealing with the growth. After baling was laid aside the management was in a position to double-shift the faces, thus affording an opportunity of largely increasing the output of coal from the lower workings. As the general character of the Brunner roof is a hard sandstone grit, no serious difficulty, apart from water, is experienced to win the full percentage of coal at a minimum risk to life and property. In the development of the Barrier pillar, which divides the rise- and dip-workings, satisfactory progress has been made in cutting levels to the far end of it. By means of these levels the coal will be conveyed as the workings are brought back. The ventilation is strictly attended to, and all necessary precautions are taken to guard against the accumulation of gas. Returns and all places over falls tested and found clear. Lead-locked Marsaut safety-lamps are in use from the mine-mouth. Reports are strictly kept, and other provisions of the Act enforced. Air-measurement, 16,000 cubic feet per minute. Seven inspections made. On the 10th May William McLuskie, a water-baler, sustained fracture of both legs by a runaway pair of wheels and axle on the dip-incline, and on the 12th November the same person had his right leg broken by falling on the rail whilst hanging on the "jock" at the back end of the engine-race.

Brunner Rise Mine.—(14/12/98): Since this mine was opened operations were carried on by two shifts up to the month of July, but from that time a single shift has been adopted. The supply of coal is won from the extraction of pillars, of which the working area is now confined to No. 1 block. When the mine was developed the coal in this district was only partly worked; therefore, to provide a roadway that would exhaust the coal next to the cliff it was necessary to reopen No. 1 incline. To carry out this work a substantial, heavy-timbered roadway was made, and relaid with a double line of tramway up to the solid face, the coal being lowered by means of a self-acting incline. From this landing a second heading was driven that connects with the rise adit-level, which provides a second outlet and also a direct air-return. As the western faces approach the cliff the roof is of a broken character, and more than ordinary care in timbering the faces is required by the miners. The roadways and faces are safe, and every attention is given by the management to win the highest percentage of coal from the pillars. Manager's and firemen's books kept to date. Gas not reported. For some months past two men have been prospecting a piece of coal that lies between the two mines and outcrops to the terrace. At present the prospects of obtaining solid coal are unfavourable, and do not warrant the construction of a separate tramway to the shoots. A miner named Samuel Groom had his leg broken by a piece of stone falling from the roof whilst engaged putting up a set of timber at the face. Seven inspections made.

Coal Creek.—(18/11/98): During the year prospecting and development on this property have been at a standstill. Some of the outcrop that is cut into for short distances shows splendid samples of high-class coal. The bridge across the Grey River is being actively pushed forward. Mr. Alison informs me that this work is now completed.

Accidents and Fatalities.

8th February.—Coalbrookdale: An authorised shot-firer named Alexander Nicol received injuries, which terminated fatally, from an explosion of blasting-powder that he was carrying loose in a tamping-box, which was strictly against orders.

10th May.—Brunner Dip Mine: A water-baler named William McLuskie had both his legs broken by a pair of runaway truck-wheels and axle on dip incline.

12th November.—Brunner Dip Mine: William McLuskie (the same person) had his right leg broken by falling on the rail whilst hanging on the "jock" at the back of the engine-race.

14th November.—Brunner Rise: A miner named Samuel Groom had his leg broken by a piece of stone falling from the roof in the working-face.

23rd September.—Westport-Cardiff: A stone-drive contractor named Walter Bird had his right leg broken while he was engaged putting up a heavy set of timber.

General Remarks.

The output for the present year shows an increase on the preceding year of 34,292 tons; and, being guided by the projected and active developments that are being pushed vigorously forward, particularly in the Westport district, we may anticipate a progressive increase on our future outputs.

ACCIDENT FUND.

The following table shows the increase on the amounts credited at the Post-Office Savings-Bank on the 1st January for the years 1897 and 1898:—

—	1st January, 1897.	1st January, 1898.	Increase.
	£ s. d.	£ s. d.	£ s. d.
Westport Coal Company	1,424 9 11	1,665 9 9	240 19 10
Westport-Cardiff	44 9 2	118 16 6	74 7 4
Greymouth-Point Elizabeth	136 9 0	136 10 5	0 1 5
Blackball Coal Company	180 11 1	281 9 7	100 18 6
Total	1,785 19 2	2,202 6 3	416 7 1

The following shows the decimal rate of 1d. per ton, which includes all accidents that have occurred during the year: Westport Coal Company, 0·29; Westport-Cardiff, 0·23; Greymouth-Point Elizabeth, 0·57; Blackball Coal Company, 0·16.

FOREIGN TRADE.

During the year 1898 the Westport Coal Company shipped 10,708 tons of coal to ports outside New Zealand. This shows a decrease of 5,993 tons compared with the preceding year's shipments.

I have, &c.,
R. TENNENT,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

No. 4.

Mr. JOHN HAYES, Inspector of Mines, Dunedin, to the UNDER-SECRETARY for MINES.

SIR,— Office of Inspector of Mines (Southern District), Dunedin, 16th March, 1899.

As required by the provisions of section 67 of "The Coal-mines Act, 1891," I have the honour to submit the following report on the mines visited during the year ending 31st December, 1898:—

CANTERBURY.

Springfield Colliery, Springfield.—(5/8/98): The workings are kept in very fair order. The roof is "short," and needs careful timbering. Several small faults are met with, and the coal varies considerably in thickness. Ventilation quite adequate, and the condition of the mine generally is satisfactory.

Canterbury Colliery, Sheffield (Austin Brothers).—(5/8/98): A new level tunnel has been driven to the seam from the base of the hill, and will shortly connect with the workings. This will greatly facilitate haulage, which is at present worked up a dip-tunnel. This latter will form an excellent return airway and second outlet. The system adopted here for working the coal admits of very little waste. A certain amount of water finds its way into the workings through the worked-out ground, and keeps the roadways in a very muddy condition. It is proposed to cut a deep gutter in the present haulage-level when the new tunnel is through, so as to intercept this water, and prevent it, if possible, following down the dip of the seam. A survey has been recently made. Ventilation very good. Roadways in rather a rough state.

Homebush Colliery, Glentunnel (T. Brown, Manager).—(4/8/98): I inspected all the working-places. The pillars are being extracted from the far end of the workings in a systematic manner, and Mr. Brown keeps the pit in very nice order. Ventilation quite satisfactory.

St. Helens Mine, Whitecliffs (H. Levick).—(3/8/98): This pit (5 ft. seam) is kept in very fair order, and is excellently ventilated. Report-books, &c., kept properly up to date. Mr. Levick has recently reopened a tunnel which was cut some years ago, and is working a seam about 3 ft. thick.

Hartley Mine, Whitecliffs (W. Leeming).—(3/8/98): At my last visit a dip-drive was being driven. This came into some old workings, and has since collapsed, owing to the drag from the worked-out ground and an influx of water from the gully overhead. Another tunnel is partly driven to reach solid coal (said to be 7 ft. thick), but at this date work is suspended, and the place is under offer to a company.

Wairiri Coal-mine.—(2/8/98): Owing to the faulty nature of the ground, the thinness of the seam, and the expense of carting to a railway, it has been found impossible to work this pit other than at a loss, and it is now closed. I found the workings in very fair order, and on returning to Dunedin gave notice to the proprietors as to supplying plan, &c.

Brockley Coal-mine.—(2/8/98): Some prospecting has been done recently, and the Brockley seam cut near the outcrop. At present an extension of the tramway is being made to allow of further prospecting being undertaken. No coals have been worked since my last visit.

Mount Somers Mine (G. Park).—(9/8/98): At present all the work is opencast. When water is available Mr. Park strips an area of surface by sluicing, but he has a short length of tunnel open, so that, if he is short of water for sluicing, underground work can be resorted to. Sufficient ground is stripped at present to meet requirements for a month or two, and work is in hand to strip another length of face.

Waiho Forks Lignite-mine, Waimate.—(11/8/98): The small amount of coal being got here is from an opencast pit about a mile and a half from the township. The upper portion of the seam is said to be a good gas-producing material. From general appearances, I am inclined to think that the deposits are extensive, and that a shaft sunk on the terrace near the railway-station should reach a seam at a reasonable depth. Having direct railway communication, a mine here could supply Waimate (seven miles distant) and the surrounding district with fuel at a reasonable price, and will, no doubt, be of value in years to come. Present output is mainly for owners' private use.

Elephant Hill, Waimate.—(11/8/98): A lignite-mine (for private use) has been worked intermittently on the Elephant Hill Station for several years, but does not appear to have previously come under the notice of the Mines Department. It is situate about fifteen miles from Waimate. A good thick seam of lignite (similar in appearance to that at Ngapara) is found in the face of a hill, and headings have been driven into it for a considerable distance. These are maintained in very creditable condition. I understand no lignite is sold from this mine.

NORTH OTAGO.

Wade's Coal-pit, Kurow (Scott and Porter).—(2/11/98): The seam is almost vertical. The level in which Scott was working at my last inspection has been driven about 4 chains from the dip-tunnel, the coal getting gradually worse. At the face it is 8 ft. wide, and quite worthless. Further back the width was only 4 ft. About a chain from the bottom of the tunnel a cross-cut has been driven to another seam, averaging barely 3 ft. wide, of very medium quality. Air good.

Cairns's Coal-pit, Kurow (W. B. Cairns).—(2/11/98): The pit is at present idle, and flooded out. The workings are practically under the bed of the Awakino River, and some weeks ago a heavy inflow of water was met with. During the progress of pumping out the water, the pump-piston became detached from the piston-rod, and rendered the pump useless. The water has since filled the pit completely, and Mr. Cairns is now endeavouring to hire a pump to drain the mine sufficiently low to enable him to effect repairs to his own pump.

Sutherland's Coal-pit, Wharekuri (D. Sutherland).—(2/11/98): At my last inspection a tunnel was being driven to open out this mine. After the coal was reached it was found that old workings existed on each side, and only a very limited area was available to the tunnel. The seam is nearly vertical, and varies from 20 ft. to 40 ft. wide. A new tunnel has been commenced some distance further up the gully, in expectation of reaching solid coal. For many years past coal has been worked from the gully on a small scale by different parties, but from what I can learn no plans appear to have been kept.

St. Andrew's Coal-mine, Papakaio (T. Nimmo).—(3/11/98): This mine has been opened out on a correct system, the headings having been driven to the boundary in the first instance. The pillars are now being extracted from the back, leaving all goaf behind. Ventilation, &c., kept up to the mark. The pit is well and carefully managed.

Prince Alfred Coal-mine, Papakaio (John Willetts).—(3/11/98): The old mine is now almost worked out. A new tunnel has recently been driven (from a point lower down the gully than the old entrance), which has cut the seam to the dip of the old mine-workings. An upcast shaft has also been sunk. The coal appears variable and faulty. Ventilation very good. Survey has recently been made, and a copy of the plan supplied me.

Ngapara Coal-mine, Ngapara (W. Nimmo).—(4/11/98): Since my last visit the workings have been continued in the solid coal. The top of the air-shaft has also been boxed up for some distance above the surface. Ventilation good, and workings maintained in safe condition. Mr. Nimmo has recently purchased the land formerly held under lease for mining purposes.

Shag Point Colliery, Shag Point (Thomas Shore, manager).—(7/2/98): With the exception of a couple of headings in No. 4 seam, all the workings are in No. 5 seam, which does not average more than 2 ft. 9 in. thick. The coal is thinning towards the rise, and from present appearances the area above shaft-bottom level will be exhausted in the course of a year or so. The method of working is longwall, and little or no coal is lost. In No. 4 seam the coal is of a good workable thickness, but, unfortunately, has bands of stone and unsaleable coaly dirt running through it. The coal from No. 5 seam is of splendid quality, but I am afraid it will not pay to work to the dip of the shaft-bottom, unless the shaft is sunk deeper and the seam cut by a level tunnel, so as to obviate hauling up an incline. I examined all the workings, also the second outlet-shaft, and found everything satisfactorily conducted; air good; and the Act generally well observed. (14/11/98): The coal in the rise-workings in No. 5 seam is being rapidly exhausted. On the north-east side of the shaft the strata between No. 5 seam and a small seam generally found above it has run out, so that the two now appear as one seam. Ventilation and general arrangements satisfactory. It is proposed to sink the shaft an additional 300 ft., and to drive a level tunnel from the shaft-bottom to the dip of the measures to intersect No. 5 seam, at a depth of, say, 700 ft. below the level of the shaft-top. This, if carried out, will cause a certain area of the workings to be submarine. Nothing is yet settled in respect to this proposed development.

Allandale Colliery, Shag Point (W. Everest, secretary).—(8/2/98): At this colliery a considerable amount of new work has been in hand for some time, and the new incline tunnel referred to in my last report was connected with the dip-workings from the old tunnel shortly after my last visit. The hauling plant has been moved to the new tunnel-mouth, and sidings laid, screens erected, &c. This is now the working outlet of the mine, the old tunnel being used for the purposes of ventilation and as a second outlet. Underground, the opening-out has been vigorously pushed ahead. On the south side the coal retains a good average thickness and quality, but going north it is thinner and not so good, owing to the occurrence of bands of stone and numerous small faults. This latter condition causes areas of bad roof, necessitating the use of a good deal of timber, and naturally the places so affected are necessarily rough, but I had no reasonable cause for fault-finding as regards the safety or otherwise of these places. I travelled through the entire workings

and out by the old tunnel. In connection with the new tunnel there are a few conditions of a somewhat temporary character which it would be desirable to have put on a better footing, and about which I wrote the company on the day following my visit. Mr. McIntosh, the managing director, afterwards informed me, in the course of conversation, that he was attending to my wishes as quickly as circumstances would permit. (5/5/98): Mr. J. C. Campbell, having accepted the position as manager of the Burnweil Colliery, Lovell's Flat, is succeeded by Mr. Alexander Gillanders. (15/11/98): I again inspected the mine, and found it splendidly ventilated. The workings have been considerably extended since my last visit, and present much the same features as before. The coal varies from 3 ft. to 9 ft. thick.

SOUTH OTAGO.

Fernhill Colliery, Abbotsford (James Gray).—(20/7/98): In company with Mr. Gray, I examined all the working-faces, &c. As mentioned in my last report, the Silverstream water-race crosses above the workings, and a little soakage takes place, which finds its way into the mine. As a result of this a lot of *débris* became heated, and eventually fired. A portion of the mine is therefore sealed off on account of this fire, and at my visit I noticed the smell of smoke pervading almost all the workings. Under date of the 22nd July I wrote Mr. Gray calling his attention to this, and to the necessity of maintaining a more brisk ventilation, to carry off any smoke which it is not possible to prevent escaping into the workings.

Abbotsford Colliery (Freeman's Coal Company; E. R. Green, manager).—(13/7/98): Since my last visit the workings have advanced in solid coal. The old workings are sealed off, and no traces of fire-stink are observed at the stoppings. Workings generally in good order, and a very fair ventilation is maintained. The new pumping-engine has been started; it is a compound condensing Tangye duplex, with steam-cylinders 5 in. by 8 in. diameter by 12 in. stroke. Water-pistons are 5 in. diameter, and delivery-pipes 4 in. diameter. Steam is conveyed in well-covered pipes down the main incline, and an extra boiler and new brick chimney is in course of erection at surface.

Walton Park Colliery (John Kenyon, manager).—(30/6/98): Since Mr. Kenyon took charge a roadway has been opened up from the tunnel entrance to the far end of the workings, and preparations made to bring back the pillars in a systematic manner. The hauling-engines (which used to work the dip-rope at the shaft) have been placed at the tunnel-mouth, and will shortly be set to work. Ventilation and general arrangements are well attended to, and report-books properly kept. As the Walton Park branch line of railway runs through the colliery property arrangements have been made with the mine-owners to leave an area of pillar-coal at each side of the railway reserve for the protection of the line. In order to see that this is done I have made several visits to the mine, and am making periodical surveys on behalf of the Government.

Jubilee Colliery, Walton Park (Louden and Howarth, proprietors; James Louden, manager).—(30/6/98): This is a new colliery, and takes its name from the fact of its being commenced in the year of Otago's jubilee (1898). It is situate at the north-east base of Saddle Hill, and is entered by an adit-level (driven in coal and coaly ground) approximately 40 ft. above sea-level. The seam is the same as that worked by Messrs. Christie at Saddle Hill, but it is to the dip of their workings. At the Jubilee Mine the seam is split up into four divisions, but it is expected that as the workings advance to the rise these will die out, and the seam be found similar to where it is worked by Messrs. Christie. The adit is well driven, and secured by Tasmanian hardwood timbers. A temporary air-shaft, 60 ft. deep, 4 ft. 3 in. by 2 ft. 9 in., has been sunk to provide ventilation during opening-out. It is intended to sink a larger one to the rise when the workings are further advanced. A narrow-gauge tramway connects the mine to the siding at the terminus of the Walton Park branch railway.

Saddle Hill Colliery (Christie Brothers).—(21/7/98): In my last report I mentioned that a new outlet tunnel to the mine was in course of construction. This has been completed, and a small hauling-engine erected, which insures a considerable saving compared with the former method of horse-haulage from the old entrance (now used as a travelling-road and air-way). Mr. Christie keeps the mine in splendid order; reports, surveys, &c., all up to date; and the ventilation A1.

Burnwell Coal-mine, Saddle Hill (Adam Harris).—(21/11/98): Mr. Harris continues to work his mine in a good, safe manner, and maintains excellent ventilation. The coal is strong, and where the top coal is left on in driving the places practically no timber is needed. A tunnel has been commenced lower down the hillside to give an outlet for the coal to the dip.

Glenochiel Mine, Saddle Hill (Bryce Brothers).—(2/9/98): This colliery is within a short distance of the Mosgiel Colliery. Mr. D. Bryce thinks the seam is not the same as that worked at Mosgiel Colliery, and that there is barren ground between the two mines. I noticed, however, that similar conditions affect the seam here as at Mosgiel Colliery. Extensions since my previous inspection have proved the strata to have ceased to dip and begun to rise, but the work is not yet sufficiently developed to determine the cause. Places in good order, and well ventilated.

Mosgiel Colliery, Mosgiel (J. Sneddon, manager).—(2/9/98): Since my last visit the main incline has been continued, and it has been found that the seam has ceased to dip and begun to rise, thus forming a trough or syncline at its lowest point. Whether the field will turn out to be in the form of a basin, or whether the rising strata may only be indicative of a fault ahead, is not yet proved. The working-places, airway, and plant are kept in good condition. Report-book, plans, posting of rules, &c., have proper attention.

Real Mackay Mine, Akatore, Milton (Anthony Young.—(26/4/98): Part of the work here is opencast and part underground mining. Seam about 20 ft. thick, lying almost level. Place generally in very good order. Report-book kept and rules posted.

Hardwick's Pit, Akatore, Milton (Noah Hardwick).—(26/4/98): Some time last year Mr. Grant, Hardwick's partner, left the mine, and it is now being worked by Mr. Hardwick alone, single-handed. The workings, which are approached by an adit-tunnel, are in fair order, and good ventilation is maintained. The output is very small.

Reed's Pit, Akatore, Milton.—(26/4/98): This place looks deserted. A few tons appear to have been taken at odd times from near the outcrop, and the faces are pretty well covered up with *débris*. No one about.

Fortification Coal-mine, Milton (A. Love, proprietor).—(26/4/98): A new mine has been started on lands belonging to Mr. William Noble. The coal appears about 10 ft. thick, of which 7 ft. is being worked. The entry is by a drive from the outcrop of the seam, which has a very gentle dip to the east. Generally speaking, the mine was in fair order, and the ventilation adequate. At present the coal is hauled by a hand-winch, but a portable engine has recently been placed at the mine-mouth for drainage purposes, and will also be utilised for hauling. No report-book or plan at the mine, nor were the rules posted up. Gave owner notice *re* these matters under date the 30th April. (18/10/98): Mr. Love has recently sold out to the Fortification Railway and Coal Company (Limited), who had some idea of connecting the mine to the Government railway at Milton by a branch line. At my visit three men were employed, and matters were much in the same way as at my previous inspection. No rules were posted up, no report-books kept, no plan of the mine available, nor any supply of mining timber on hand. I immediately wrote the company in respect to these matters, requiring compliance with the law, which was promised forthwith in a letter from the company's secretary under date the 21st November, 1898.

McGilp's Mine, Milton.—(26/4/98): This pit has been working for about a year. It is an opencast quarry, and situate on Mr. McGilp's private land. The coal is fully 20 ft. thick, and a fair amount of surface has been stripped off in advance of the working-face.

Wallsend Coal-pit, Lovell's Flat (R. Hewitson).—(27/10/98): A bed of lignite is being worked opencast to a depth of about 25 ft., and at the face is overlaid by about 14 ft. of stripping, consisting of clay and soil, with clayey quartz-gravel next the coal. A small area (for current requirements) is stripped. Mr. Hewitson will strip during the summer for next season's trade.

Burnweil Colliery, Lovell's Flat (Messrs. Gibson and Lees, owners).—(6/1/98): I visited this mine for the purpose of arranging for one of the men to act as provisional manager under a permit, owing to the firm having temporarily curtailed their operations and reduced the number of men employed to six. The mine was in very fair order, and excellently ventilated; report-books kept up to date, rules posted, &c. Since my last visit an indicator has been attached to the winding-engine, and other matters attended to. (5/5/98): Mr. J. C. Campbell, late of Allandale Colliery, took charge as manager. (27/10/98): At this visit the mine was idle, and, as steam was down and no engine-man about, I could not go underground. Mr. Campbell informs me that the roadway to connect the two shafts has still 5 chains to go, and that its continuation has recently been stopped owing to the fact that the coal has become absolutely worthless in this direction; and the seam as a whole not taking the market, the proprietors have decided to stop getting coal at the end of the year, and sink the shaft another 300 ft. or thereabouts, in expectation of getting a better seam. A bore-hole has been put down 280 ft. below the seam. At this depth trouble was experienced in consequence of some of the ground running; but the proprietors have informed me that the indications were such as to give them encouragement to sink the shaft. (17/11/98): In consequence of an accident to one of the miners I visited the colliery, and found it well ventilated and looked after. Report of accident under separate heading.

McDougall's Tuakitoto Coal-pit, near Lovell's Flat.—(27/10/98): The seam here is entered by a dip-drive, and said by Mr. McDougall to be the same as that worked at Burnweil Colliery. The pit has been worked by other people previous to Mr. McDougall without any defined system, and very small pillars have been left. Drainage is effected by a level tunnel connecting with a ditch outside, but is not low enough, consequently nearly half of the seam in the workings is underfoot. Ventilation very good. No labour is employed by owner, and no survey of the mine has been made. A shaft was commenced some time ago near the outcrop of the seam, with the object of proving the lower measures, and was sunk 160 ft., when it was stopped for want of funds.

Benhar Lignite-mine, near Stirling (P. McSkimming and Son).—(15/7/98): The old mine is now closed for the present, and another has been opened on the opposite side of the railway, at which five men are employed. The lignite appears about 8 ft. thick, and is overlaid by clays and quartz grit. Pit in very fair order, and well ventilated. Very little timber is required. Rules not posted, nor any report-book kept. Gave notice about this on return to Dunedin.

Mount Wallace Lignite-mine, Stirling (H. H. Hull, lessee).—(15/7/98): This is a small mine on Mr. Anderson's farm, and the principal trade is during the threshing season. The thickness of the seam is not known, but some 10 ft. is being worked to a limited extent by one man, and the place is kept in very fair order.

Kaitangata Colliery.—(13/7/98): New ground is being opened out in the main seam east of No. 4 fault. The north level in this section is standing, owing to its being ahead of the ventilating current, and has cut and crossed a small fault, beyond which the coal is giving off firedamp. The place has been properly fenced off, and a parallel roadway is being driven for ventilation. Between Nos. 3 and 4 faults top-coal is being dropped in the bords, and the old north main level, at the foot of the engine-plane, is being reopened to take out the remaining pillars. Pillar-working is still in hand south of the foot of the engine-plane, and also in the north section of the shaft-workings. Work has been continued in the lower seam through the prospecting-tunnel driven from the shaft section. The coal being worked shows a thickness of some 8 ft. only, and I am inclined to think the seam may be divided. A small blower of gas and water is met with in the floor of the main heading, and this may be from coal below. So far as the driving in coal has gone the seam is patchy in quality, but appears to be improving. This portion of the mine is at present ventilated by brattice-work, assisted by jets of compressed air, but headings are being cut to the rise to establish a connection with the long tunnel from the engine-plane workings. Safety-lamps are used, and the coal gives off a little gas. Ventilation on the whole is very fair, but it may become desirable at no distant date to sink a new

upcast-shaft and adopt fan-ventilation in lieu of the present furnace. (28/10/98): In company with the manager, Mr. W. M. Shore, I inspected the working-places throughout, and found things in reasonably good order. In the eastern extremity of the workings safety-lamps are used, and in one of the leading rise-places I found some firedamp, which the men said had made its appearance very suddenly during the previous hour, and they had, in consequence, moved to a working-place lower down. The attention of the deputy was subsequently drawn to it, and I learned from him that all traces of the gas had gone by the end of the shift. From inquiries instituted, it appears that a brattice-sheet had been displaced by one of the truckers. This had the effect of cutting the air-current off the extreme rise-places temporarily, and so admitted of a small accumulation of gas, which, considering the phenomenal fall in the atmospheric pressure during the forenoon (nearly 1 in. in the barometer in some three hours), could not be wondered at under the circumstances. I visited these rise-places again after the interval of a few weeks, and found everything quite clear. The company has recently sold out to a Home syndicate, and steps are to be taken to establish a connection with the shaft of the adjoining Castle Hill Mine, now standing, but owned by the same syndicate. This, when accomplished, should have the effect of materially increasing the amount of air in the mine.

Record Reign Mine, Kaitangata (Robert Penman, lessee).—(14/7/98): A small mine bearing the above name has been opened on Landell's Estate, on the crown of the hills crossed by the new coast road. It is adjacent to the small pits formerly worked by M. Carson and G. Cormack, and works the same seam. Two men and a boy are employed. Workings are in good order. Ventilation adequate, and report-book, &c., properly kept.

Smith's Mine, Wangaroa, near Kaitangata (J. Smith, lessee).—(14/7/98): The seam here is 10 ft. to 12 ft. thick, and the workings in good order, with any amount of air. The area and output are very limited.

Central Otago.

Jones's Pit, Coal Creek.—(4/6/98): The lessee has got a block of coal stripped for current requirements, and proposes to sluice off a lot of surface in the ensuing spring. This is a step I have repeatedly urged. The mine is an open quarry, with an exposed face of coal of some 50 ft. in thickness, and an unknown quantity underfoot.

McPherson's Pit, Coal Creek, Roxburgh.—(4/6/98): The present working-face appears from 20 ft. to 26 ft. thick. A good area of surface is now being stripped, as recommended by me at my last visit. The stripping varies from 6 ft. to 8 ft. in thickness.

Craig's Perseverance Mine, Coal Creek, Roxburgh.—(4/6/98): Mr. Craig has had considerable trouble with fires in his mine. The seam is close on 100 ft. wide, and lies from an angle of 45° to vertical, entailing much difficulty in working. In consequence of fire since my last visit, he had to let the ground down to smother out the fire, and reopen his mine. At this date everything is in nice order, and the workings well ventilated. The water gets away by a race without being pumped.

T. McLoughlin's Pit, Shingle Creek.—(3/6/98): A small pit, worked on a very limited scale, for local use. The seam appears on edge, and is very much disturbed and deteriorated, a good percentage being of a soft mullocky nature. There is no prospect of its ever being a great success. Air good, and workings in fair order.

Mrs. Drummey's Coal-mine, Alexandra.—(17/9/98): This is a new pit which has been recently sunk between Bruce's and Lett's mines, and of which no notice has been sent. At this date the shaft is down to, but not through, the coal-seam. (4/10/98): Received notice from Mrs. Drummey that operations were commenced on the 12th July last.

Alexandra Coal-mine, Alexandra (W. Thomson, owner).—(16/9/98): Mr. Thomson has recently taken up an area of ground adjacent to his former leasehold and to the dip of his present workings, and is now driving on the dip of the seam below the levels from his shaft. The coal appears to continue very good as far as it is yet proved. Working-places in good order, and ventilation adequate. Plans of recent workings up to date, but the boundary of the workings of several years ago (not shown on plan) ought to be surveyed. Under date of the 4th October, 1898, I drew the owner's attention to this.

McQueenville Coal-mine, Alexandra (Robert Lett, owner).—(19/9/98): As more men are employed at this mine than is allowable under the permit held by Mr. J. S. Johnston (as manager to Mr. Lett), the pit is now managed by Mr. James Howie, who holds a second-class certificate. Ten men are employed getting coal. The places are in good order, and excellently ventilated. Rules posted, and plan up to date.

Bruce's Coal-mine, Alexandra (Bruce, Simpson, and Co., owners).—(17/9/98): This is a new pit which has been sunk within the last year or so, and is now opening out. It is situate on the Manuherikia Road, east of Lett's mine. The seam has a workable thickness of about 6 ft., a band of stone which runs through the coal bringing the gross thickness to nearly 7 ft. Places in good order, but ventilation rather slack at faces, owing to stoppings being imperfect. Rules posted, and survey brought up to date.

Dungey's Pit, Cambrians (C. Dungey).—(21/9/98): Working opencast. Seam 7 ft. thick, overlaid by 9 ft. of shingly stripping. Short length of face kept stripped for current requirements. Place very well worked, but a little more batter at the sides is desirable.

Hughes's Pit, Cambrians (J. Ormond Hughes).—(21/9/98): At this visit I was fortunate enough to find Mr. Hughes at the pit. As reported previously, this pit is kept in a very unworkmanlike condition. The opencast face, which has been worked for many years, is about a quarter of a mile long, but no ground is stripped in advance, and coal is being got anyhow and anywhere possible. I pointed out to Mr. Hughes the unsatisfactory and somewhat dangerous nature of the

work, and recommended him to work the pit systematically, either by stripping a section of given area or by underground mining. Of the latter he has no knowledge whatever. The seam has a varying thickness up to 30 ft.

Blackstone Hill (A. Dunsmuir).—(22/9/98): This pit is standing full of water. No work has been done for several months, and no notice sent of cessation of work.

Blackstone Hill (James Enwright).—(22/9/98): A new opencast pit near to and on the opposite side of the road from Dunsmuir's. Lignite about 17 ft. thick at face. Stripping 5 ft. to 7 ft. thick; practically nothing stripped in advance. Recommended a reasonable area of cover being stripped off in front. No notice sent me *re* this pit being opened.

McLean's Pit, Idaburn (L. McLean).—(22/9/98): Very little work appears to have been done since my former visit. Mr. McLean works the pit (an opencast quarry) himself, and does a very limited trade.

Beck's Pit, Idaburn (C. Beck).—(22/9/98): Like White's and McLean's pits, this is worked opencast, the seam having an aggregate thickness of 35 ft. Five men employed. At present very little ground is stripped in advance, but this part of the work was being taken in hand at my visit.

White's Pit, Idaburn (John White).—(22/9/98): This being a slack time of the year, the most of the work at present being done is in stripping off a good area of coal, so as to meet demands later on. Pit in good order. Two men at present employed.

Docherty's Pit, Gimmerburn.—(22/9/98): When at Idaburn I learned that Docherty's pit at Gimmerburn had not been working for some months. No notice has been sent in terms of section 47 of "The Coal-mines Act, 1891."

Commercial Coal-mine, Kyeburn Diggings (C. Archer).—(23/9/98): As previously reported, the coal here is practically vertical. The principal danger is in taking down head-coal next the *débris* from upper workings, and this point is well watched. A new tunnel has recently been driven to the seam from the river-bank opposite Mr. Archer's house, but not yet opened out to any extent. Ventilation, &c., satisfactory.

McCreedy and Coombe's Pit, Kyeburn Diggings.—(23/9/98): This pit is practically exhausted, and is now only worked occasionally for home use.

Dunstan Coal-pit Company, Clyde (John Smart, secretary).—(14/1/98): This mine has been worked from an adit, and is said to have been connected with the workings from a disused shaft. At my visit I found the mine had been for some time idle, and attempted to examine it in company with one of the proprietors. After travelling about 200 yards along the tunnel the ventilation was so bad (owing to an accumulation of black-damp) that our lights would not burn, and we had to return. It was thought that a heavy fall had taken place and choked up the airway. Entrance properly secured by a gate, which is kept locked.

Marie's Dairy Creek Pit, Clyde.—(14/1/98): Little or no work has been done here for some years. Marie has lately taken a partner, and work is now being resumed. The workings (which are very limited in extent) are in fair order, but the pillars are far too small, and if a "creep" takes place it is morally certain to close the place entirely.

Cromwell Coal-mine (Goodger and Stronach).—(13/1/98): Since my last visit work has been intermittent. At this date the mine is full of water, the recent floods in the river having risen above the adit connected with the shaft. The pumping arrangements are most unsatisfactory, and there is little or no hope of work being carried to a successful issue until proper pumping appliances are provided.

Cooper's Mine, Cromwell.—(18/1/98): This mine is situate on the opposite side of the Kawarau River to Wilson's Mine, and about half a mile nearer Cromwell. It is entered by a level, and the seam is 3 ft. 6 in. thick, immediately overlaid by a bed of carbonaceous clay. The workings are very limited in extent, and generally in very fair order. Ventilation quite satisfactory.

Pryde's Pit, Bannockburn.—(15/1/98): This pit is entered by an incline drive, cut at about half-dip, the full dip of the seam being 1 in 4. System of work, pillar and stall. A heavy fall has occurred on the main incline. This is of recent date, and has brought down the sand above the roof-coal, together with a little water. As the result of this, the lowest level is filling up with water. Mr. Pryde states that his pit was quite dry previously. The fall has not been cleaned up, but a roundabout road has been cut through the pillars for haulage purposes, and nothing is being done to take out the water. If this is allowed to continue, the pit (which is on Crown land) will sustain serious damage. The air generally is sweet, but there does not appear to be any proper system of directing it through the workings. No proper plan is kept, rules not posted up, nor any record of daily examination made. (12 to 15/5/98): I again visited the mine and surveyed such workings as were accessible. No attempt has been made to clear the fall previously referred to, nor to take out the water, which is steadily accumulating in the lower levels. The lessee continues to neglect the provisions of the Act *re* keeping a daily report-book at the mine, and also as to posting of rules, notwithstanding my letter to him of the 28th January directing his attention to this matter. Under date of the 11th June I gave Mr. Pryde notice to have his pit put into proper order, by repairing the incline and taking out the water, failing which, steps would be taken to enforce the conditions of his lease. He replied on the 15th June that preparations were in hand for doing the necessary work with despatch.

Parcell and Gibson's Mine, Bannockburn.—(15/1/98): A tunnel dipping 1 in 3, and meeting the rise of the measures, intersects a seam 5 ft. 6 in. thick, which is being worked on the pillar-and-stall system. The coal is strong, but works freely. Ventilation excellent, and the pit in first-class order. Coal hauled by horse-power.

Wilson's Mine, Bannockburn.—(15/1/98): The mine is entered by an adit tunnel, and the coal is 5 ft. thick, with a dip of 1 in 4. The left-hand level is heavily fallen, and some timbers in the tunnel need renewing. Ventilation rather sluggish. Three days previous to my visit T. Wilson, jun. (who worked the mine), was drowned in the Kawarau River (see "Accidents").

SOUTHLAND.

Pukerau Lignite-mine (C. O'Hagan).—(26/8/98): Mr. O'Hagan continues to work his mine in a satisfactory style. The bulk of the working-places are underground, but a little opencast work is also done where the cover is light. Report-book properly kept, and survey made.

Dudley's Lignite-pit, Pukerau (J. D. Dudley).—(26/8/98): Opencast work. Clay stripping fully 12 ft. thick, overlying 14 ft. of lignite. Mr. Dudley has a fair amount of lignite stripped in advance of requirements.

Green's Pit, West Gore (J. Smyth).—(25/8/98:) Mr. Kenyon (who had leased this pit), having taken the management of Walton Park Colliery, has disposed of his interest to Mr. Smyth, who owns an adjoining pit. Mr. Smyth is at present working Green's pit only, and contemplates an extension of the workings towards the dip. Places in good order, and well ventilated. Report-books and plan up to date.

Hill's Lignite-pit Landslip, Waikaia (J. P. Hill).—(21/12/98): In thickness and quality the lignite is variable. The face now shows a gross thickness of 16 ft., of which 10 ft. may be said to cover the saleable stuff. The stripping also is very thick, and consists of clayey gravels (with beds of sand and clay), carrying a little gold. Some old underground workings in the lignite are exposed. Altogether the place is worked in a very rough fashion, and at each visit I have cautioned the men at work as to the need for great care in guarding against accidents from falls of stripping. On the 6th instant Mr. Hill was fined £2 and costs for neglecting to furnish the statutory returns required by section 68 of "The Coal-mines Act, 1891."

Argyle Coal-pit, Waikaia (J. B. Cosgrove).—(22/12/98): Not working at present. The pit is in a very rough state, and apparently no lignite has been got for some months.

Goldie's Pit Landslip, Waikaia (J. Goldie).—(21/12/98): The working of lignite has not yet commenced. Some 50 ft. of gravels overlie the seam, and as these carry a little gold, ground-sluicing has been first resorted to in order to strip the lignite, which will be worked opencast.

Pyramids Coal-mine, Mandeville (A. Hunter).—(20/12/98): The seam here is approximately 18 ft. thick, with a dip of 1 in 2. About 9½ ft. are worked. The entrance is by a cross-cut adit at the foot of a gully, the second outlet and return airway being at a place near the outcrop where a portion of the coal was worked opencast some years ago. The coal is strong and hard to get, a band of stone from 1 ft. to 3 ft. thick having to be worked out. The pit is in very fair order, and nicely ventilated. Two men employed.

Sleeman's New Pit (Waimumu Lignite-pit, Mataura).—(9/5/98): Mr. Sleeman is getting his new pit into work. The drainage is effected by a tunnel which has been driven from the banks of the Mataura River. This will allow of many years' work without the necessity of pumping. A good tramway has been laid and loading-bank erected. It is a characteristic of Mr. Sleeman to do things in a satisfactory style, and a pleasure to visit his mine, which is worked opencast. The gravel overlying the lignite is about 10 ft. thick.

Bogside Coal-mine, Mataura (H. Brown).—(9/5/98): The dip-drive by which it was intended to open the mine has been abandoned, and the lignite is now worked by stripping off the surface, Towns's old pit (which is adjacent) being reopened for the purpose. Some 13 ft. of lignite is being worked. Above this is 7 ft. of gravel, and a very reasonable area is stripped in advance of the working-face. Pumping is done by a small duplex steam-pump worked in conjunction with the old water-wheel-driven pump in the part of the pit formerly worked by C. Towns.

Beattie and Coster's Mine, Mataura.—(9/5/98): The face of work is continued much on the same lines as at my previous visit, about 9 ft. of gravel being stripped off the top of the lignite. Some of this is auriferous, and possibly it might pay to dredge these flats for gold.

Munro's Lignite-pit, Wyndham (E. Munro).—(24/8/98): An opencast pit on the township reserve, and adjacent to the Mataura River. Lignite 5 ft. thick, overlaid by a sandy clay cover of some 10 ft. The pit is very subject to floods when the river is high. Stripping was in progress at my visit.

McDonald's Pit, Ota Creek.—(24/8/98): Adjoins Shields's, but is not now worked, except for private use. Messrs. Marshall and E. and A. Jones also take their requirements from the same pit.

Ota Creek Lignite-pit, near Wyndham (W. Shields).—24/8/98: This pit is worked opencast, and presents the following section: Sandy clay, 1 ft. to 3 ft.; gravel, 5 ft. to 7 ft.; lignite, 6 ft.: 6 ft. to 10 ft. of stripping. At present the whole of the above section is shown in one vertical face, all the lignite which was stripped during the slack season having been worked. It is the intention of Mr. Shields to strip a good area during the summer.

Pine Bush Lignite-mine (J. D. Trotter).—(24/8/98): This pit is situate about midway between Wyndham and Fortrose. It is worked opencast, from 4 ft. to 5 ft. of clay stripping overlying a face of lignite about 10 ft. thick. Stripping is kept fairly well in advance. Demand is quite limited.

Graham's Lignite-mine, Fairfax.—(24/6/98): Mr. Graham continues to work his mine with every regard to safety. I surveyed his workings on this date.

Reed's Morley Pit, Nightcaps.—(23/6/98): This pit is worked opencast, and a good area of ground is kept stripped in advance of the working-face.

Nightcaps Colliery (John Lloyd, manager).—(23/6/98): Accompanied by Mr. Lloyd, I inspected the entire colliery. In the dip-places the coal keeps about 10 ft. thick; it is very much jointed, and needs great care in working. A good supply of timber is kept handy and used, and every attention appears to be paid to insure safety. Ventilation very good. At the level-tunnel workings (company's freehold) the present working-faces are in the middle portion of the seam, which is in three divisions, having an aggregate thickness of 38 ft. of coal, with 25 ft. to 30 ft. of bands. The coal is very strong, and requires blasting. Ventilation and general arrangements are well attended to.

Accidents and Fatalities

11th January.—Thomas Wilson, jun., employed at his father's coal-pit, near the banks of the Kawarau River, at Bannockburn, was drowned in the river. The coal from the pit is sent across the river in bags by means of a rope tramway. This tramway was also used by deceased when going to and from work. It is supposed he missed his hold of the cage, and fell into the river.

19th January.—Patrick Atkinson, employed at Cairns's pit, Kurow, was caught by a haulage-rope and carried some distance. He fell off and got a few bruises and a severe shake.

18th March.—An ignition of gas took place at Kaitangata Colliery by which four men were slightly burned. I inspected the place at the earliest opportunity, and found the accident happened in a prospecting drive. The men employed in the drive all worked with safety-lamps, a lamp-station being established at the outbye end of the drive. Coal had been struck in the drive a few days previously, and on the day in question the deputy went in to supervise and assist in extending the brattice. To do this, a short length of temporary brattice had to be taken down first, and, as a natural consequence, a little gas accumulated at the face. Just at this time the trucker came in with a truck, and he had carelessly omitted to leave his open light at the lamp-station, coming in with a naked light (instead of a safety-lamp), which he carried on his cap. On his reaching the face, the gas ignited at his light, and he, together with the deputy and two other men, received slight burns. A fifth man who was present escaped unhurt. The company took out a summons against the trucker for violation of Special Rule 74, but the man left the district in a hurry; consequently the summons could not be served.

15th July.—Frederick Loader, coal-miner, Allandale Colliery, had a small ankle-bone fractured by a piece of roof falling on him, and was off work for over three months.

10th November.—William Burt, employed at Shag Point Colliery, when turning a box on a flat-sheet, omitted to hook the chain to the box. The box commenced to run down hill, knocking Burt against a prop, breaking his collar-bone. I inspected the place and inquired into the accident on the 14th November.

11th November.—Alexander Forest, a coal-miner at Burnweil Colliery, Lovell's Flat, was severely hurt by a fall of coal from the face. The place in which Forest was working was a new one, just starting from the side of a brow, and there was abundance of timber set. A "slip" (or false back) crosses the place where he was working in an oblique direction, and, the coal being naturally proud and subject to bumps, a large piece of coal bounded by the slip referred to, burst out from the face, knocking Forest down, and injuring him severely.

There have been a few other accidents of a minor character throughout the district, but none (other than those above referred to) call for notice.

General.

In the interests of the colony, I am not at all satisfied with the way in which the pits in many parts of Otago are worked; but so long as numerous leases of small area are granted in districts where the consumption is comparatively small, I do not see how it is possible that any improvement can take place. These small mines work close to the outcrop, are in many instances run without proper coal-mining engineering knowledge at cut-throat prices, and a large percentage of coal, which under proper management and concentration of operations could be worked, becomes irrecoverably lost. Every ton so lost is a national loss, and, to my mind, the question is one of serious importance as regards the future.

I am pleased to report that the system adopted last year for the collection of the mine-owners' contributions to the Coal-miners' Relief Fund is working very satisfactorily, and there are now no arrears to the 31st December, 1898.

At several small mines where underground work is carried on no plans of the workings have hitherto been kept, and in out-of-the-way places the owners said they could not afford the expense of bringing a surveyor from a distance. As these mines are mostly, if not altogether, on Crown lands, and it is important that a record should be kept of what is done underground, the Hon. Minister of Mines has authorised me to survey such mines at my inspections, and to supply the owners with a copy of the plan at a nominal rate.

I have, &c.,
John Hayes,
Inspector of Mines.

The Under-Secretary for Mines, Wellington.

APPENDIX I.

Statistics of Workings in Coal-mines, 1898.

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 1898.			Approximate Total Output to 31st December, 1897.	Approximate Total Output to 31st December, 1898.	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.		
NORTH ISLAND.																										
Kawakawa District.													Tons.	Tons.	Tons.	Tons.	Tons.									
Kawakawa (stopped) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	794,845	794,845	..	..	..	..	..	..	..	..	..
New Bay of Islands Company	Ross, John	4 5/12	bitum.	1	3′ to 10′	the whole	1 in 5	bord and pillar	1	5′ x 5′	..	adit	10,622	..	10,622	38,175	48,797	1	14	15	horses	..	..	..	natural	13/12/98
Hikurangi District.																										
West Bryans (stopped) ..	..	9	〃	..	..	..	..	..	..	..	..	..	..	..	..	34,325	34,325	..	..	..	..	..	..	..	..	..
Walton & Graham's (stopped)	..	..	〃	..	..	..	..	..	..	..	..	..	..	..	..	1,210	1,210	..	..	..	..	..	..	..	..	..
Hikurangi Coal Company ..	Moody, T. P. ..	5	〃	1	7′	6′ to 7′	1 in 8	bord and pillar	4	6′ x 5′	..	adit incline	32,973	..	32,973	91,701	124,674	5	46	51	steam and horse	..	..	..	natural	15/12/98
Phœnix (stopped)	..	4	〃	1	12′	6′ to 12′	1 in 8	ditto	1	6′ x 9′	240′	ditto	1,800	..	1,800	10,023	11,823	1	6	7	horse	..	..	..	〃	..
Hikurangi Colliery.. ..	Kerr, George ..	2	〃	1	12′	12′	N.E. irregular	〃	2	6′ x 9′	..	〃	11,937	..	11,937	4,484	16,421	7	15	22	horses	..	..	..	〃	15/12/98
Whangarei District.																										
Kamo (stopped)	..	..	〃	..	..	..	..	..	..	..	..	..	..	..	..	225,037	225,037	..	..	..	..	..	..	..	..	..
Kamo New	Griffin, J. ..	4 10/12	〃	1	3′	3′	N.E. irregular	bord and pillar	1	4′ x 3′ 6″	60′	adit incline	968	..	968	6,885	7,853	1	3	4	horse	..	..	..	natural	17/12/98
Whauwhau (stopped) ..	..	..	〃	..	..	..	..	..	..	..	..	..	..	..	..	70,853	70,853	..	..	..	..	..	..	..	..	..
Ngunguru District.																										
Kiripaka	Gould, C. L. ..	6	〃	1	2′ to 10′	the whole	1 in 12	bord and pillar	3	7′ x 5′	..	adit and incline	15,840	..	15,840	71,702	87,542	14	35	49	engine and horse	4″	4″	..	natural	16/12/98
Waikato District.																										
Waikato	Wallace, William	10	brown	1	8′ to 16′	8′ to 12′	1 in 7½	ditto	2	6′ x 9′	37′, 40′	adit	12,733½	137½	12,871	194,255	207,126	9	21	30	horse	..	..	..	〃	22/12/98
Taupiri Extended	Tattley, William	12	〃	1	20′ to 50′	7′ to 20′	irregular	〃	2	10′ diam.	170′ and 204′	shaft incline	28,199	522	28,721	552,378	581,099	10	28	38	steam	duplex	7″ & 5″	170′ 204′	fan	22/12/98
Taupiri Reserve	Wright, E. S. ..	12	〃	1	18′ to 24′	10′ to 16′	..	〃	2	9′ x 6′	254′	adit	15,466	408	15,874	160,462	176,336	11	29	40	〃	14″	7″	260′	exhaust steam	22/12/98
Ralph's (stopped)	..	..	〃	..	..	..	..	..	..	..	..	..	..	..	..	23,019	23,019	..	..	..	..	..	..	..	..	..
Ralph's Taupiri	Harrison, J. ..	1	〃	1	60′ to 70′	7′ to 20′	irregular	bord and pillar	2	10′ x 5′	190′	shaft	12,219	506	12,725	..	12,725	10	40	50	steam	2′ 2″	8″ & 5″	180′	exhaust steam	21/12/98
Mokau District.																										
Mokau Mine	Tattley, Wm., jun.	14	〃	1	7′	7′	1 in 36	ditto	2	8′ x 7′	1,300′	adit	3,395	..	3,395	12,713	16,108	3	7	10	horse	..	..	..	natural	17/10/98
Fernside	Lobb, Joseph ..	1	〃	1	3′ to 5′	the whole	1 in 24		1	7′ x 5′ 9″	400′	〃	657½	..	657½	..	657½	..	3	3	manual labour	..	..	..	〃	17/10/98
Co-operative (stopped) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	940	940	..	..	..	..	..	..	..	..	..
Miranda District.																										
Bridgewater (stopped) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,668	20,668	..	..	..	..	..	..	..	..	..
Bombay District.																										
Bombay (stopped)	Long, William..	8	brown	1	4′ to 6′	the whole	irregular	bord and pillar	..	6′ x 6′	200′	adit	6½	..	6½	75	81½	..	..	..	..	..	..	..	..	..
Totals, North Island	..	..	..	..	..	..	..	..	..	..	..	..	146816½	1,573½	148,390	2,313,750	2,462,140	72	247	319						

COLLINGWOOD.																												
Pakawau	Caldwell, W. S. O.	4	bitum.	2	2′ 5″ to 3′	all	1 in 3	longwall	..	..	900′	..	702	..	702	1,024	1,726	..	6	6	..	..	..	..	natural	..
Enner Glynn	Wise, George	3	semi-bitum.	1	5′	″	vertical	..	2	8′ x 4′ & 4′ x 3′	180′,330′	..	388	120	508	829	1,337	1	3	4	horse-whim	..	..	..	″	..
Motupipi	Goulding, J. E.	..	glance	1	5′ to 5′ 8″	″	..	..	..	..	..	..	20	..	20	70	90	1	3	4	..	..	..	..	..	—/11/98
Mines not now at work.																										
Wallsend	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	47,413	47,413	..	..	..	..	..	..	..	..	..
Takaka, Takaka	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	70	..	..	..	..	..	..	..	..	..
WESTPORT.																										
Westport-Cardiff	Broome, G. H.	6	bitum.	1	17′	all	varies	bord and pillar	2	9′ x 7′	400′	adit and incline	44,718	15,383	60,101	132,413	192,514	20	90	110	engine	2′	8″	60′	fan	21/12/98
																						2′	8″	50′		
Millerton, Granity Creek	Dixon, Jonathan	7	″	1	4′ to 40′	8′	″	ditto	2	4′ x 4′	18′	endless rope	69,514	17,755	87,269	79,783	16,705	45	110	155	gravity	12″	4″	40′	fan	30/11/98
																						12″	4″	40′		
																						4″	2″	20′		
																						4″	2″	20′		
Coalbrookdale	Dunn, W.	18	″	2	4′ to 20′	all	″	″	4	8′, 8′, 8′, & 6′ sq. 9′ x 5′	48′, 148′, 90′, 148′ 216 ch.	adit	157,650	35,201	192,851	2,271,497	2,464,348	85	225	310	engine	7″	6″	30′	fan	23/12/98
																						24″	9″	75′		
Iron Bridge	Milligan, N.	7	″	2	4′ to 20′	″	″	″	..	..	..	..													″	22/12/98
Waitakere	Humphries, J.	29	lignite	1	14′	″	..	..	..	..	..	..	100	..	100	768	868	1	..	1	horse	..	..	..	..	..
Mines not now at work.																										
Mokihinui	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	43,074	43,074	..	..	..	..	..	..	..	..	..
Whitecliffs, Buller Road	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	774	774	..	..	..	..	..	..	..	..	..
Flax Bush, Lyell	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	230	230	..	..	..	..	..	..	..	..	..
LONGFORD.																										
Longford	Goodger, William	3	glance	1	2′	all	45°	longwall	1	6′ x 4′	400′	..	400	..	400	1,430	1,830	1	1	2	hand	..	..	..	natural	..
Mine not now at work.																										
Alexander	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	282	282	..	..	..	..	..	..	..	..	..
BOATMAN'S.																										
Mines not now at work.																										
Coghlan's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	370	370	..	..	..	..	..	..	..	..	..
Archer's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,280	1,280	..	..	..	..	..	..	..	..	..
Barr's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	35	35	..	..	..	..	..	..	..	..	..
REEFTON.																										
Burke's Creek	Cairns, R.	1	brown	1	14′	12′	varies	bord	2	9′ x 9′	250′,150′	tramway	688	..	688	..	688	2	3	5	horse	..	..	..	natural	8/12/98
Murray Creek	Sara, James	15	semi-bitum.	1	14′	all	1 in 4	open-face	..	..	..	surface line	701	..	701	8,285	8,986	2	..	2	manual	..	..	..	..	9/12/98
Phœnix	Fox, John	9	ditto	2	30′	10′	1 in 10	driving	..	6′ x 4′	200′	..	1,400	..	1,400	11,549	12,949	1	2	3	..	..	..	..	natural	..
Inkerman Gold-mining Co.	Jamieson, J.	2	..	1	4′ 6″	all	41°	″	1	6′4″x4′6″	53′	tramway	355	..	355	240	595	..	1	1	windlass	..	..	..	″	..
Golden Treasure	Davidson, J.	17	bitum.	1	25′	″	1 in 4	opencast	..	..	..	..	689	..	689	5,740	6,429	2	..	2	..	..	..	..	..	9/12/98
Lankey's Gully	Lamberton, W.	17	″	1	5′ 6″	4′ 6″	1 in 75	bords	..	level 4′	200′	..	275	..	275	7,554	7,829	..	1	1	..	..	..	..	natural	2/12/98
Devil's Creek	Macquhan, J.	2½	brown	1	6′	4′ 6″	3 in 14	stoping	1	5′ x 6′	30′	drive	10	30	40	..	40	..	2	2	hand	..	..	..	″	7/12/98
Progress New Mine	Cochrane, T.	25	pitch	1	6′	4′ 6″	..	driving	..	11′	70′	..	100	..	100	7,257	7,357	1	2	3	″	..	..	..	″	8/12/98
Breen's	Breen, P.	6	bitum.	2	4′	4′ 6″	1 in 3	″	..	4′ x 6′	500′	..	416	..	416	1,137	1,553	1	2	3	..	..	..	..	″	8/12/98
Coal Creek	Croswell, C.	8	brown	1	7′	all	to east	″	..	..	..	..	4	8	12	55	67	..	..	..	whim	..	..	..	..	..
Mines not now at work.																										
Reefton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	..	..	..	..	..	..	..	..	..
Cochrane's	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	370	370	..	..	..	..	..	..	..	..	..
Sir Francis Drake	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,173	2,173	..	..	..	..	..	..	..	..	..
Cumberland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,070	1,070	..	..	..	..	..	..	..	..	..

STATISTICS of WORKINGS in COAL-MINES, 1898—*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 1898. Coal.	Output for 1898. Slack.	Output for 1898. Total.	Approximate Total Output to 31st December, 1897.	Approximate Total Output to 31st December, 1898.	Number of Men ordinarily employed. Above.	Number of Men ordinarily employed. Below.	Number of Men ordinarily employed. 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.
MIDDLE ISLAND—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
GREYMOUTH.																										
Blackball	Leitch, James ..	8	bitum.	1	12′	10′	1 in 5	bord and pillar	..	9′ x 6′	1,232′	adit	43,072	9,763	52,835	163,076	215,911	24	72	96	endless rope	..	..	..	furnace	12/12/98
Brunner	Coulthard, J. ..	34	″	1	6′	all	S.W. 1 in 4	ditto	2	10′ x 7′	2,400′	engine-plane	49,744	16,047	65,791	1,431,725	1,497,516	38	102	140	engine	16″	8″	220′	fan	17/11/98
Brunner Rise	Dando, M. ..	5	″	1	7′	″	S.W. 1 in 4	″	2	10′ x 7′	1,254′	adit						27	55	82	horse				nat'l	16/11/98
Mines not now at work.																										
Coal-pit Heath	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	577,190	577,190	..	..	..	..	..	..	..	..	..
Tyneside	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18,398	18,398	..	..	..	..	..	..	..	..	..
Wallsend	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	205,539	205,539	..	..	..	..	..	..	..	..	..
CANTERBURY.																										
Springfield, Springfield ..	Barker, H. ..	22	brown	1	3′ 3″	all	1 in 6	bord and pillar	2	6′ 6″ x 4′	70′	shaft	1,934	189	2,123	79,609	81,732	2	6	8	steam	direct-acting steam			exhaust from pump	5/8/98
Sheffield, Sheffield	Austin Brothers..	36	″	1	4′	″	1 in 3	ditto	..	7′ x 5′	..	dip incl.	2,310	..	2,310	47,220	49,530	2	7	9	horse	..	..	..	natural	5/8/98
Homebush, Glentunnel ..	Brown, T. ..	26	″	1	7′	″	1 in 3	″	..	7′ x 6′	40 ch.	adit	3,983	..	3,983	110,662	114,645	2	6	8	″	..	..	..	″	4/8/98
St. Helen's, Whitecliffs ..	Levick, H. ..	9	″	2	3′	″	1 in 2	″	..	6′ x 4′ 6″	..	″	840	..	840	1,983	2,823	1	4	5	hand	..	..	..	″	3/8/98
Hartley, Whitecliffs ..	Leeming, W. ..	3	″	1	..	..	1 in 6	″	..	6′ x 6′	3 ch.	dip tunl.	165	..	165	1,590	1,755	1	5	6	steam	..	..	..	″	3/8/98
Wairiri, South Malvern ..	Thompson, A. ..	1½	″	1	5′ 6″	all	..	″	..	6′ x 4′ 6″	3⅔ ch.	adit	545	..	545	668	1,213	1	4	5	hand	..	..	..	″	2/8/98
Mount Somers, Ashburton ..	Park, G. T. ..	34	″	1	35′	″	1 in 9	open	..	..	..	..	1,833	844	2,677	26,556	29,233	3	..	3	″	..	..	..	″	9/8/98
Rutherford's, Albury ..	Young, W. ..	7	″	1	22′	10′	1 in 1	narrow	1	4′ x 3′ 6″	68′	shaft	293	..	293	1,373	1,666	1	1	2	horse	..	..	..	″	14/9/97
Pits worked for Private Use only.																										
Dalethorp, Springfield ..	Nuthall, A. J. ..	4	brown	1	..	..	..	..	..	..	..	..	7	..	7	117	124	..	..	..	..	..	..	..	..	..
Snowdon, Rakaia Gorge ..	Gerard, W. (owner)	13	″	1	14′	8′	..	narrow	1	4′ x 4′	90′	shaft	185	..	185	1,062	1,247	..	..	..	..	..	..	..	..	19/6/93
Acheron, Lake Coleridge ..	Murchison, J.	29	anthra-cite	1	4′	all	..	″	..	..	..	adit	25	..	25	478	503	..	..	..	..	..	..	..	..	15/1/95
Cragieburn, West Coast Road	Manson, D. ..	2	brown	1	..	..	..	..	..	..	..	″	28	..	28	30	58	..	..	..	..	..	..	..	..	..
Springburn, Stavely ..	Leeming, W. ..	..	″	..	..	..	..	..	..	..	..	..	100	..	100	..	100	2	..	2	..	..	..	..	..	..
Waihao Forks, Waimate ..	McPherson, D. ..	6	″	1	..	..	..	open	..	..	..	..	24	..	24	137	161	..	..	..	..	..	..	..	..	11/8/98
Studholme (Stoney Creek), Waimate	Grant, W. (owner)	9	″	1	..	..	..	narrow	..	..	..	adit	2	..	2	90	92	..	..	..	..	..	..	..	..	28/6/93
Elephant Hill, Waimate ..	Melville, W. ..	30	″	.	..	..	..	..	..	..	..	..	38	2	40	..	40	2	..	2	..	..	..	..	..	11/8/98
Pits not now at work.																										
Kowai Pass, Springfield ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	559	559	..	..	..	..	..	..	..	..	..
Glenroy, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	115	115	..	..	..	..	..	..	..	..	..
Whitecliffs, South Malvern..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33,051	33,051	..	..	..	..	..	..	..	..	..
Duke's (Park Gate), Kakahu	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	916	916	..	..	..	..	..	..	..	..	..
Spring Vale, Fairlie Creek ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	200	200	..	..	..	..	..	..	..	..	..
Mount Hutt, Rakaia Gorge..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	155	155	..	..	..	..	..	..	..	..	..
Brockley, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12/8/97
Hartley, South Malvern ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32	32	..	..	..	..	..	..	..	..	..

NORTH OTAGO.																											
Wade's, Kurow	Scott, D ..	19	brown	1	15′	7′	vertical	stoping	1	6′ x 2′ 6″	53′	adit	..	..	..	5,459	5,459	1	2	3	horse	..	..	..	natural	2/11/98
Cairn's, Kurow	Cairns, W. B. ..	32	"	1	irregular	..	1 in 2½	narrow	1	4′ x 3′	80′	dip incl.	411	..	411	10,984	11,395	1	2	3	"	..	..	..	"	2/11/98
Sutherland's, Wharekuri ..	Sutherland, J. ..	..	"	..	..	..	..	..	..	..	..	..	150	..	150	..	150	1	2	3	..	..	..	..	"	2/11/98
St. Andrew's, Papakaio ..	Nimmo, T. ..	20	"	1	8′	7′	1 in 3	bord and pillar	1	4′ x 2′ 6″	60′	adit	1,344	..	1,344	23,213	24,557	1	4	5	horse	..	..	..	"	3/11/98
Prince Alfred, Papakaio ..	Willetts, John ..	29	"	1	7′	6′	1 in 5	ditto	1	4′ x 4′	50′	"	970	..	970	40,534	41,504	2	4	6	"	..	..	..	furnace	3/11/98
Ngapara, Ngapara	Nimmo, W. ..	20	"	1	18′ to 25′	8′	1 in 4	"	..	6½′ x 4½′	15 ch.	"	559	..	559	14,553	15,112	1	1	2	"	..	..	..	natural	4/11/98
Shag Point, Shag Point ..	Shore, T. ..	35	pitch	2	5′ and 2′ 9″	all	1 in 4	ditto and longwall	3	16½′ x 6′	450′	shaft	17,608	5,489	23,097	318,724	341,821	12	56	68	steam	2′	6″	450′	steam from pump	14/11/98
Allandale, Shag Point ..	Gillanders, A. ..	11½	"	1	variable, 3′ 6″ to 9′	"	1 in 4	bord and pillar	..	10′ x 6′	20 ch.	dip tunl.	8,892	4,342	13,234	103,135	116,369	8	42	50	"	2′	5″	..	ditto	15/11/98
Pits not now at work.																											
Phillips's, Kurow	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,985	1,985	..	..	..	..	..	..	..	..	..
Wharekuri (Collins's), Kurow	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,424	1,424	..	..	..	..	..	..	..	..	..
Rosebery, Otepopo ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,424	1,424	..	..	..	..	..	..	..	..	..
Early Bank, Otepopo ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	281	281	..	..	..	..	..	..	..	..	..
SOUTH OTAGO.																											
Fernhill, Abbotsford ..	Gray, J. ..	21	brown	1	19′	10′	1 in 10	bord and pillar	1	4¾′ x 4½′	..	adit	763	3,524	4,287	118,304	122,591	5	13	18	horse	..	..	..	furnace	20/7/98
Freeman's, Abbotsford ..	Green, E. R. ..	17½	"	1	6′ to 8′	all	1 in 9	ditto	1	..	..	"	5,328	2,963	8,291	219,484	227,775	4	19	23	steam	..	..	..	"	13/7/98
Walton Park, Abbotsford ..	Kenyon, J. ..	28	"	1	15′ to 17′	12′	1 in 9	"	3	6′ x 4′ to 12′ x 4′	25′ to 175′	"	11,227	683	11,910	510,113	522,023	5	21	26	"	..	..	..	"	7/9/98
Jubilee, Abbotsford ..	Loudon, J. ..	1	"	1	..	..	..	"	..	..	..	"	2,374	692	3,066	..	3,066	..	..	..	..	..	..	..	natural	30/6/98
Saddle Hill, Fairfield ..	Christie, J. ..	24	"	1	19′	10′	1 in 10	"	3	5′ x 2′	50′	incline	2,546	1,615	4,161	89,229	93,390	2	6	8	horse	..	..	..	furnace	21/7/98
Burnwell, Fairfield	Harris, A. ..	7	"	1	16′	10′	variable	"	1	5′ x 3′	..	variable	1,361	1,169	2,530	6,162	8,692	2	7	9	"	..	..	..	"	21/11/98
Glenochiel, Fairfield ..	Bryce, D. ..	17½	"	1	16′	7′	"	"	1	8′ x 4′	43′	"	2,039	..	2,039	17,086	19,125	1	3	4	"	..	..	..	natural	2/9/98
Lauriston, Brighton ..	Walker, J. ..	12	"	1	9′	8′	"	"	1	..	48′	"	246	46	292	4,166	4,458	1	2	3	"	..	..	..	"	24/11/97
McColl's, Brighton	McColl, D. L. ..	10	"	1	3′ to 4′	all	"	"	..	..	..	..	..	..	..	1,082	1,082	..	1	1	"	..	..	..	"	24/11/97
Mosgiel, Mosgiel	Sneddon, J. ..	15	"	1	15′	9′	1 in 10	"	2	4′ x 4′ 6′ x 4′	27′ to 32′	incline	3,406	2,139	5,545	62,137	67,682	3	7	10	steam	..	..	..	"	2/9/98
Real Mackay, Milton ..	Young, A. ..	30½	"	1	15′	all	1 in 8	"	..	..	..	adit	587	..	587	20,969	21,556	1	1	2	"	..	..	..	"	26/4/98
Akatore, Milton	Hardwick, N. ..	4	"	1	14′	"	..	"	..	..	..	"	141	..	141	350	491	1	1	2	..	..	..	..	..	26/4/98
Reid's, Akatore, Milton ..	Reid, James ..	4	"	1	14′	"	..	"	..	..	..	"	..	..	..	244	244	1	1	2	..	..	..	..	..	26/4/98
Fortification, Milton ..	..	1½	"	..	..	..	..	"	1	4′ x 4′	..	dip	1,145	296	1,441	500	1,941	2	3	5	steam	..	..	..	..	26/4/98
McGilp's, Milton	McGilp, N. ..	..	"	1	20′	all	1 in 8	open	..	..	..	open	472	..	472	..	472	..	..	..	..	..	..	..	..	26/4/98
Adam's Flat, Adam's Flat ..	Reid, John ..	16	lignite	1	14′	10′	..	"	..	..	..	"	31	..	31	2,017	2,048	1	..	1	hand	..	..	..	..	3/10/93
Paskell's, Adam's Flat ..	Paskell, J. ..	34	"	1	8′	all	1 in 6	"	..	..	..	"	12	2	14	404	418	..	..	..	"	..	..	..	..	1/11/95
Wallsend, Lovell's Flat ..	Hewitson, R. ..	28	"	1	20′	"	..	"	..	..	..	"	346	..	346	9,532	9,878	2	..	2	horse	..	..	..	..	27/10/98
Burnweil, Lovell's Flat ..	Campbell, J. C. ..	4	brown	1	16′	8′	1 in 6	bord and pillar	2	11′ x 4′ 8′ x 4′	465′ 320′	shaft	4,479	6,748	11,227	7,710	18,937	7	20	27	steam	..	..	..	natural	17/11/98
Tuakitoto, Lovell's Flat ..	McDougall, M. ..	9	"	1	20′	8′	..	ditto	1	..	..	incline	135	..	135	2,765	2,900	..	1	1	horse	..	..	..	"	27/10/98
Benhar, Stirling	McSkimming, P.	35	"	1	30′	12′	..	"	2	4′ x 4′	..	"	2,407	414	2,821	87,830	90,651	1	5	6	"	..	..	..	furnace	15/7/98
Mount Wallace, Stirling ..	Hull, H. H. ..	4	"	1	14′	8′ to 10′	..	"	..	..	..	adit	360	16	376	1,198	1,574	..	1	1	hand	..	..	..	"	15/7/98
Kaitangata, Kaitangata ..	Shore, W. M. (W. P. Watson, general manager)	22	"	2	10′ to 40′	10′ to 35′	variable	"	2	13′ x 5′ 6″ & 6′ dia.	704′	incline & shaft	63,761	36,989	100,750	1,044,848	1,145,598	20	170	190	steam	..	..	..	"	28/10/98
Castle Hill, Kaitangata ..	(Standing) ..	5	"	1	5′ to 15′	..	"	"	1	10′ diam. 11′ x 6′ 6″	500′ 2,200′	incline tunnel	160	65	225	39,037	39,262	1	1	2	"	..	..	..	"	..
Record, Kaitangata ..	Penman, R. ..	1¼	"	..	..	..	..	"	1	..	..	..	364	..	364	50	414	1	1	2	hand	..	..	..	natural	14/7/98
Wangaroa, Kaitangata ..	Smith, J. ..	18	"	1	10′ 6″	8′	1 in 6	"	..	..	..	adit	60	10	70	1,110	1,180	..	1	1	"	..	..	..	"	14/7/98
Conical Hills, Waipahi ..	Lischmuir, F. ..	12½	lignite	1	15′	all	..	open	..	..	..	..	2,500	..	2,500	17,310	19,810	4	..	4	horse	..	..	..	..	25/8/96
Valley Road, Pukerau ..	Orchard, E. C. ..	9	"	1	20′	"	..	"	..	..	..	..	367	..	367	2,326	2,693	3	..	3	..	..	..	..	..	26/10/96
Pits worked for Private Use only.																											
Taratu, Kaitangata ..	Frazer Brothers ..	26	brown	1	..	..	..	..	..	..	..	adit	43	..	43	30	73	..	1	1	hand	..	..	..	..	21/5/97

Statistics of Workings in Coal-mines, 1898—*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 1898.			Approximate Total Output to 31st December, 1897.	Approximate Total Output to 31st December, 1898.	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.		
MIDDLE ISLAND—*continued.*																										
South Otago—*continued.* *Pits not now at work.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Early Rise, Milton																15	15									
Chain Hills, Abbotsford																842	842									
Salisbury, Mosgiel																4,433	4,433									
Bruce No. 2, Milton																23,322	23,322									
Rigfoot, Stirling																5,163	5,163									
Morrison's, Stirling																646	646									
Pomahaka, Pomahaka																20	20									
Castle Hill No. 1, Kaitangata																9,314	9,314									
Crofthead, Kaitangata																6,713	6,713									
Langridge, Kaitangata																693	693									
Lakeside, Kaitangata																700	700									21/5/97
Lesmahagow, Kaitangata																1,511	1,511									
Cowpan's Owaka																95	95									
Shennan's, Waipahi																45	45									
Central Otago.																										
Coal Creek, Roxburgh	Coskery, R.	28	lignite	1	unknown	50′	variable	open				open	1,875		1,875	15,008	16,883	3		3	horse					4/6/98
McPherson's, Roxburgh	McPherson, M.	28	〃	1	〃	30′ to 40′	〃	〃				〃	2,277		2,277	14,236	16,513	4		4	〃					4/6/98
Perseverance, Roxburgh	Craig, J.	11	〃	1	99′	70′	vertical			6′ x 7′		adit	1,099		1,099	10,561	11,660	2	2	4	hand				natural	4/6/98
Black Diamond, Shingle Creek	McLouglin, T.		〃										76		76	102	178	1	1	2					〃	3/6/98
Drummey's, Alexandra	Mrs. Drummey (owner)		〃										9		9		9	1	1	2	hand				〃	17/9/98
Alexandra, Alexandra	Thomson, W. A.	19	brown	1	14′	7′		bord and pillar	2	5′ x 2′ 6″ 6′ x 4′	60′	adit	3,532		3,532	24,776	28,308	1	5	6	horse				〃	16/9/98
McQueenville, Alexandra	Howie, J.	12	〃	1	14′	7′		ditto	2	4′ 9″ x 3′	62′	shaft	5,591		5,591	15,898	21,489	2	8	10	〃				〃	19/9/98
Simpson, Theyers, and Co.	Theyers, W.	1¼	〃	1									1,367		1,367	79	1,446	2	3	5	〃					17/9/98
Cambrian's, Cambrian's	Dungey, C.	14	lignite	1	9′	all		open				open	745		745	12,069	12,814	3		3	〃					21/9/98
Welshman's Gully, Cambrian's	Hughes, O.	37	〃	1	30′	〃		〃				〃	1,714		1,714	22,899	24,613	4		4	〃					21/9/98
Blackstone Hill, Blackstone Hill	Dunsmuir, A.	32	〃	1	unknown	16′		〃				〃				2,219	2,219									22/9/98
Price's, Blackstone Hill	Price, G.	1	〃	1				〃				〃	20		20		20	1		1	hand					
Padgett's, Blackstone Hill	Padgett, B.	1	〃	1				〃				〃	46		46		46	1		1	〃					
Enwright's, Blackstone Hill	Enwright, J.	1	〃	1				〃				〃	458		458		458	2		2	horse					22/9/98
McLean's, Idaburn	McLean, L.		〃	1		all		〃				〃	321		321	411	732	1		1	hand					21/9/98
Rough Ridge, Idaburn	Beck, C.	12	〃	1	35′	〃		〃				〃	842		842	11,878	12,720	3		3	horse					22/9/98
Idaburn, Idaburn	White, J.	28	〃	1	20′	〃		〃				〃	695		695	29,304	29,999	2		2	〃					22/9/98
Border, Idaburn	Turnbull, G.	28	〃	1	12′	〃		〃				〃	294		294	4,513	4,807	1		1	〃					18/11/97
Gimmerburn, Gimmerburn	Docherty, C.	33	〃	1	12′	〃		〃				〃	132		132	2,193	2,325	2		2	hand					22/9/98
Commercial, Kyeburn	Archer, C.	19	brown	1	10′	8′	vertical	stoping				shaft	858		858	11,409	12,267	1	2	3	water				natural	23/9/98
Dairy Creek, Clyde	Pratt, J.	26	〃	1	unknown							incline	678		678	3,737	4,415	1	2	3	hand				〃	14/1/98
Vincent, Clyde	Kitto, W.		〃										140		140		140	2	3	5	〃				〃	
Cromwell, Cromwell	Pollock, J.	3	〃	1					1			shaft	376	72	448	1,098	1,546	2	7	9	horse				〃	13/1/98
Cooper's, Cromwell	Cooper, J.		〃	1								adit	100		100	220	320	2		2	hand				〃	18/1/98

Cardrona, Cardrona ..	McDougall, R. ..	14	brown	1	30′	all	..	open	..	..	..	open	460	..	460	6,565	7,025	3	..	3	..	..	..	..	natural	15/10/97
Gibbston Saddle, Gibbston ..	McAllister, J. ..	12	〃	1	30′	〃	..	〃	..	..	..	〃	951	..	951	2,905	3,856	2	..	2	..	..	..	..	〃	14/10/97
Kawarau, Bannockburn ..	Pryde, J. ..	21	〃	1	8′	〃	1 in 4	bord and pillar	1	6′ x 6′	34′	incline	1,523	..	1,523	20,377	21,900	1	3	4	horse	..	..	..	〃	15/5/98
Excelsior, Bannockburn ..	Gibson, J. ..	6	〃	1	5′ 6″	〃	1 in 4	ditto	1	..	..	〃	1,836	..	1,836	1,000	2,836	1	2	3	〃	..	..	..	〃	15/1/98
Bannockburn, Bannockburn	Wilson, T. ..	9	〃	1	5′	〃	1 in 4	〃	1	6′ x 4′	20′	adit	58	..	58	1,021	1,079	1	1	2	hand	..	..	..	..	15/1/98
Nevis, Nevis	Luscombe, E. ..	5	〃	1	20′	〃	..	..	..	..	..	open	619	..	619	250	869	1	..	1	..	..	..	..	..	..
Ryder's, Nevis	Scott, C. ..	..	lignite	..	..	..	..	..	..	..	..	..	356	..	356	40	396	1	..	1	..	..	..	..	..	..
Clough and Allen's, Nevis ..	Clough and Allen	..	〃	..	..	..	..	..	..	..	..	..	46	..	46	37	83	..	..	..	..	..	..	..	..	..
Upper Nevis, Nevis ..	Connel, W. O. ..	..	〃	..	..	..	..	..	..	..	..	..	25	..	25	30	55	..	..	..	..	..	..	..	..	..
Williamson's, Nevis ..	Williamson, A. ..	..	〃	..	..	..	..	..	..	..	..	..	15	..	15	40	55	1	..	1	..	..	..	..	..	..
Pits not now at work.																										
Waikerikeri, Clyde ..	Dunstan Coal Co. (J. Smart, secretary)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,322	20,322	..	..	..	..	..	..	..	..	14/1/98
McCready and Coombes ..	Coombes, W. ..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	15,316	15,317	..	..	..	..	..	..	..	..	23/9/98
Gully Pit, Roxburgh ..	(Cockburn) ..	3	lignite	1	..	..	..	..	..	..	..	..	..	..	..	482	482	..	..	..	..	..	..	..	..	12/11/97
Enterprise, Alexandra ..	(Rivers) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	703	703	..	..	..	..	..	..	..	..	..
Perseverance, Alexandra ..	(Findlay) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	724	724	..	..	..	..	..	..	..	..	..
Gards & Cameron, Alexandra	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,128	3,128	..	..	..	..	..	..	..	..	..
Fennessy's, Idaburn ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	70	..	..	..	..	..	..	..	..	..
Cairnmuir, Bannockburn ..	(Crow & Anderson)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,451	1,451	..	..	..	..	..	..	..	..	..
Cooper &Gibson's, Bannockb'n	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,395	5,395	..	..	..	..	..	..	..	..	..
Gibbston, Gibbston ..	(Cowan's) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19,464	19,464	..	..	..	..	..	..	..	..	14/10/97
Harrex and Owens, Cambrians	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	60	..	..	..	..	..	..	..	..	..
Blackman's Gully, Clyde ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	144	144	..	..	..	..	..	..	..	..	..
Nulli Secundus, Bannockburn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	632	632	..	..	..	..	..	..	..	..	..
SOUTHLAND.																										
Pukerau, Pukerau	O'Hagan, C. ..	18	lignite	1	16′	10′	1 in 10	bord and pillar	..	6′ x 7′	530′	adit	943	..	943	24,703	25,646	1	3	4	horse	..	..	..	natural	26/8/98
Dudley's, Pukerau	Dudley, J. D. ..	9	〃	1	16′	all	..	open	..	..	..	open	275	..	275	1,697	1,972	1	..	1	hand	..	..	..	..	26/8/98
McKinnon's, Gore	McKinnon, W ..	16	〃	1	12′	〃	..	〃	..	..	..	〃	450	..	450	4,924	5,374	1	1	2	..	..	..	..	..	23/10/96
Heffernan's, Gore	Hope, J. ..	20	〃	1	30′	15′	..	〃	..	..	..	〃	1,000	..	1,000	2,787	3,787	2	..	2	..	..	..	..	..	6/10/97
Gutschlag's, Gore	Gutschlag, J. ..	15	〃	1	10′	all	..	〃	..	..	..	〃	70	..	70	3,019	3,089	1	..	1	..	..	..	..	..	8/12/97
Lietze's, Gore	Lietze, M. ..	19	〃	1	4′ to 7′	〃	..	〃	..	..	..	〃	102	4	106	1,271	1,377	1	..	1	..	..	..	..	..	8/12/97
Sarginson's, Gore	Sarginson, J. H.	12	〃	1	..	..	..	〃	..	..	..	〃	133	..	133	1,135	1,268	1	..	1	..	..	..	..	..	8/12/97
Hoffman's, Gore	Hoffman, J. ..	4	〃	1	9′	all	..	〃	..	..	..	〃	146	..	146	260	406	1	..	1	..	..	..	..	..	8/12/97
Smyth's, Gore	Smyth, J. ..	9	〃	1	19′	16′	..	bord and pillar	..	..	..	incline	889	..	889	6,218	7,107	2	3	5	horse	..	..	..	natural	25/8/98
Green's, Gore	Smyth, J. ..	10	〃	1	19′	16′	..	ditto	..	..	..	〃	1,768	..	1,768	12,874	14,642	..	..	..	〃	..	..	..	〃	25/8/98
Knapdale, Knapdale ..	Irvine Brothers ..	13	〃	1	26′	15′	almost vertical	wide headings	..	..	..	adit	748	..	748	3,967	4,715	..	1	1	..	..	..	..	〃	28/9/97
Johnston's, Waikaka Valley ..	Johnston, W. ..	5	〃	1	11′	all	..	open	..	..	..	open	420	..	420	713	1,133	1	..	1	..	..	..	..	..	15/12/97
Pemble's, Chatton	Harvey, James ..	21	〃	1	16′ to 26′	16′ to 18′	..	〃	..	..	..	〃	276	..	276	12,252	12,528	1	..	1	..	..	..	..	..	24/9/97
Pacey's, Chatton	Pacey, R. ..	22	〃	1	unknown	14′	1 in 6	〃	..	..	..	〃	335	..	335	8,926	9,261	1	..	1	..	..	..	..	..	24/9/97
McGill's, Wendon	McGill, J. ..	5	〃	1	14′	all	..	〃	..	..	..	〃	454	..	454	551	1,005	2	..	2	..	..	..	..	..	23/9/97
McDonald's, Wendon ..	Nicol, D. ..	5	〃	1	14′	〃	..	〃	..	..	..	〃	190	28	218	478	696	1	1	2	..	..	..	..	..	23/9/97
Edge's (No. 14), Wendon ..	Nicol, D. ..	..	〃	..	..	..	..	..	..	..	..	..	70	..	70	458	528	1	..	1	..	..	..	..	..	..
Edge's, Wendon	Evans, G. H. ..	20	〃	1	16′	all	..	open	..	..	..	open	272	..	272	3,191	3,463	1	..	1	..	..	..	..	..	23/9/97
Black's, Greenvale	Stevenson, J. ..	4	〃	1	12′	〃	..	〃	..	..	..	〃	148	..	148	210	358	1	..	1	..	..	..	..	..	23/9/97
Hill's, Waikaia	Hill, J. P. ..	7	〃	1	5′	〃	..	〃	..	..	..	〃	286	..	286	1,050	1,336	2	..	2	..	..	..	..	..	21/12/98
Argyle, Waikaia	Cosgrove, J. B. ..	7	〃	1	10′	〃	..	〃	..	..	..	〃	100	..	100	849	949	2	..	2	..	..	..	..	..	22/12/98
Goldie's, Waikaia	Goldie, J. ..	..	〃	..	..	..	..	〃	..	..	..	〃	142	..	142	..	142	1	..	1	hand	..	..	..	..	21/12/98
Moffet and Longshaw's, Waikaia	Moffet and Longshaw (owners)	..	〃	..	..	..	..	〃	..	..	..	〃	72	..	72	..	72	..	..	..	..	..	..	..	..	..
Waimea, Riversdale ..	Smith, J. ..	8	〃	1	..	..	..	〃	..	..	..	〃	932	..	932	4,052	4,984	3	..	3	..	..	..	..	..	30/10/96
Pyramid, Mandeville ..	Hunter, A. ..	6	brown	1	18′	9½′	1 in 2	bord and pillar	..	..	..	adit	547	..	547	388	935	..	2	2	hand	..	..	..	natural	20/12/98
Waimumu, Mataura ..	Sleeman, C. P. ..	22	lignite	1	16′	all	..	open	..	..	..	open	4,462	..	4,462	22,376	26,838	5	..	5	..	..	..	..	..	9/5/98
Bogside, Mataura	Brown, H. ..	1½	〃	1	16′	13′	..	..	..	..	..	adit	581	..	581	134	715	1	..	1	hand	..	..	..	..	9/5/98

Statistics of Workings in Coal-mines, 1898—*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 1898.			Approximate Total Output to 31st December, 1897.	Approximate Total Output to 31st December, 1898.	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.		
									MIDDLE ISLAND—*continued.*																	
SOUTHLAND—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Beattie and Coster's, Mataura	Coster, W. ..	22	lignite	1	16′	all	..	open	..	..	..	open	878	..	878	21,657	22,535	2	..	2	hand	..	..	..	..	9/5/98
Townshend's, Mataura ..	Townshend, E. ..	15	″	1	12′	″	..	″	..	..	..	″	20	..	20	469	489	1	..	1	..	..	..	..	..	28/10/96
Glendhu Coal Co., Mataura..	Otway, E. A. ..	..	..	..	..	..	..	..	..	..	..	..	10	..	10	..	10	1	..	1	..	..	..	..	..	..
Carr's, Mataura	Stuart, C. ..	..	..	..	..	..	..	..	..	..	..	..	518	..	518	..	518	1	..	1	..	..	..	..	..	..
Munro's, Wyndham ..	Munro, E. ..	11	lignite	1	5′	all	..	open	..	..	..	open	912	..	912	8,815	9,727	2	..	2	hand	..	..	..	..	24/8/98
Edendale, Wyndham ..	McDonald, A. ..	8	″	1	5′	″	..	″	..	..	..	″	25	..	25	1,960	1,985	1	..	1	″	..	..	..	..	24/8/98
Ota Creek, Wyndham ..	Shields, William	18	″	1	6′	″	..	″	..	..	..	″	640	..	640	7,678	8,318	1	..	1	″	..	..	..	..	24/8/98
Robin Hood, Pine Bush ..	Trotter, J. D. ..	17	″	1	15′	″	..	″	..	..	..	″	111	..	111	977	1,088	1	..	1	″	..	..	..	..	24/8/98
Ross and Kidd's, Hokonui (Hokonui Co.'s old mine)	Ross, R. W. ..	..	brown	1	12′	5′ to 6′	..	pillar and stall	..	..	..	..	127	..	127	51,957	52,084	..	1	1	..	..	..	..	furnace	..
Graham's, Fairfax	Graham, P. S. ..	20	lignite	1	5′ 6″	all	..	bord and pillar	..	..	..	adit	489	..	489	11,342	11,831	..	2	2	..	..	..	..	natural	24/6/98
Spey Bank, Fairfax ..	Salton, R. ..	5	″	1	5′	″	..	ditto	..	..	..	″	72	..	72	373	445	..	1	1	..	..	..	..	″	1/12/97
Isla Bank, Fairfax	Slattery, M. ..	18	″	1	6′	″	..	open	..	..	..	open	384	..	384	3,841	4,225	1	..	1	..	..	..	..	..	1/12/97
Nightcaps, Nightcaps ..	Lloyd, J. ..	17	brown	3	38′ in the aggregate	..	..	bord and pillar	..	..	..	adit	23,713	..	23,713	191,418	215,131	12	33	45	horse	..	..	..	furnace	23/6/98
Reed's Morley, Nightcaps ..	Reed, W. ..	13	″	1	10′	all	..	open	..	..	..	open	2,395	..	2,395	13,614	16,009	3	..	3	hand	..	..	..	..	23/6/98
Alley's, Nightcaps	Alley, Jesse ..	6	″	1	7′	″	..	″	..	..	..	″	64	..	64	464	528	1	..	1	..	..	..	..	..	14/7/97
Quested's, Nightcaps ..	Quested, J. ..	..	″	..	..	..	..	..	..	..	..	..	248	..	248	..	248	1	..	1	..	..	..	..	..	..
H. B., Nightcaps	Beadle & Lamont	..	″	..	..	..	..	..	..	..	..	..	58	..	58	..	58	1	..	1	..	..	..	..	..	..
Black Diamond, Nightcaps	Tinker, W. ..	..	″	..	..	..	..	..	..	..	..	..	5	..	5	..	5	1	..	1	..	..	..	..	..	..
Hunter's, Otama	Hunter, T. ..	..	″	..	..	..	..	..	..	..	..	..	200	..	200	..	200	1	..	1	..	..	..	..	..	..
Dickson and Walker, Croydon	Dickson & Walker	..	″	..	..	..	..	..	..	..	..	..	37	..	37	..	37	..	..	..	..	..	..	..	..	..
Pits worked for Private Use only.																										
Waikoikoi, Pukerau ..	Kirk, William ..	11	″	1	6′	all	..	open	..	..	..	open	11	..	11	230	241	..	..	..	..	..	..	..	..	26/10/96
Glover's, Pukerau	Glover, A. ..	4	″	1	..	″	..	″	..	..	..	″	14	..	14	45	59	..	..	..	..	..	..	..	..	..
Reid's, Waikaka	Reid, R. ..	2	″	1	..	″	..	″	..	..	..	″	3	..	3	15	18	..	..	..	..	..	..	..	..	15/12/97
Southbrook, Waikaka ..	Ayson, W. ..	4	″	1	..	″	..	″	..	..	..	″	22	..	22	90	112	..	..	..	..	..	..	..	..	15/10/95
Otama, Otama	Graham, T. ..	5	″	1	..	″	..	″	..	..	..	″	40	..	40	115	155	..	..	..	..	..	..	..	..	21/10/95
Mutch's, Mataura	Mutch, J. ..	8	″	1	4′	″	..	″	..	..	..	″	27	..	27	210	237	..	..	..	..	..	..	..	..	28/10/96
Smith's, Mataura	Smith, H. ..	5	″	1	4′	″	..	″	..	..	..	″	17	..	17	27	44	..	..	..	..	..	..	..	..	9/10/95
River View, Mataura ..	Nicoll, L. D. ..	7	″	1	..	″	..	″	..	..	..	″	69	..	69	545	614	..	..	..	..	..	..	..	..	9/10/95
Cross's, Otama	.. ..	..	″	..	..	″	..	″	..	..	..	″	4	..	4	30	34	..	..	..	..	..	..	..	..	..
Wyndham, Wyndham ..	Walker, W. ..	4	″	1	..	″	..	″	..	..	..	″	6	..	6	54	60	..	..	..	..	..	..	..	..	8/10/95
Marshall's, Edendale ..	Marshall, H. ..	7	″	1	3′	″	..	″	..	..	..	″	60	..	60	320	380	..	..	..	..	..	..	..	..	8/10/95
Jones's, Edendale	Jones, E. and A.	4	″	1	..	″	..	″	..	..	..	″	12	..	12	185	197	..	..	..	..	..	..	..	..	8/10/95
Neill's, Edendale	Neill, T. ..	3	″	1	..	″	..	″	..	..	..	″	6	..	6	61	67	..	..	..	..	..	..	..	..	8/10/95
Mount Linton, Nightcaps ..	Chalmers, N. G.	8	″	1	10′	8′	..	″	..	..	..	″	..	..	..	542	542	..	..	..	..	..	..	..	..	25/10/94
Pits not now at work.																										
Porter's, Pukerau	Porter, D. ..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	22	22	..	..	..	..	..	..	..	..	..
Town's, Mataura	Town, C. ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	8,002	8,002	..	..	..	..	..	..	..	..	..

Slaughter-yards, Mataura ..	(Freezing-works use	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	83	83	..	..	..	..	..	..	..	..	12/5/97
Perseverance, Pukerau ..	..	..	..	..	..	..	..	open	..	..	..	open	..	..	..	2,052	2,052	..	..	..	..	..	..	..	..	..	..
Frank's, Pukerau	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	45	45	..	..	..	..	..	..	..	..	..	..
Rejefsky's, Gore	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	57	57	..	..	..	..	..	..	..	..	..	..
Clukoski's, Gore	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	28	28	..	..	..	..	..	..	..	..	..	..
Kirk and Sheddon, Gore ..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	140	140	..	..	..	..	..	..	..	..	..	..
Fryer's Excelsior, Gore ..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	807	807	..	..	..	..	..	..	..	..	..	..
Dryden's, Gore	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	438	438	..	..	..	..	..	..	..	..	..	..
Kingdon's, Gore	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	27	27	..	..	..	..	..	..	..	..	..	..
Westbrook, Greenvale ..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	175	175	..	..	..	..	..	..	..	..	..	..
Middlemiss, Greenvale ..	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	15	15	..	..	..	..	..	..	..	..	..	..
Hunter's, Otama	..	..	..	..	..	..	..	"	..	..	..	"	..	..	..	1,167	1,167	..	..	..	..	..	..	..	..	..	..
Marshall's, Otama	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	48	..	..	..	..	..	..	..	..	..	..
Maslin's, Wendon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	854	854	..	..	..	..	..	..	..	..	..	..
Vial's Perseverance, Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	631	631	..	..	..	..	..	..	..	..	..	..
Cambrian (McIvor), Waikaia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	191	191	..	..	..	..	..	..	..	..	..	..
Northcote's, Waikaia ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	685	685	..	..	..	..	..	..	..	..	..	..
Carmichael's, Waimea ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,711	3,711	..	..	..	..	..	..	..	..	..	..
McGowan's, Mataura ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	125	..	..	..	..	..	..	..	..	..	..
Genge's, Wyndham ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,819	2,819	..	..	..	..	..	..	..	..	..	..
Monaghan's, Pine Bush ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	11	..	..	..	..	..	..	..	..	..	..
Morley Village (Brazer's) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,096	2,096	..	..	..	..	..	..	..	..	..	..
Wairio (Lloyd's), Wairio ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,452	3,452	..	..	..	..	..	..	..	..	..	..
Orepuki, Orepuki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,483	5,483	..	..	..	..	..	..	..	..	..	..
Cluny, Orepuki	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	156	156	..	..	..	..	..	..	..	..	..	..
Blackman's, Alexandra ..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	89	89	..	..	..	..	..	..	..	..	..	..
Black Diamond, Roxburgh ..	McLoughlin, T...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	39	39	..	..	..	..	..	..	..	..	..	..
Cromwell, Cromwell ..	Goodger, G. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	800	800	..	..	..	..	..	..	..	..	..	..
Gibson's, Bannockburn ..	Gibson, J. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	220	220	..	..	..	..	..	..	..	..	..	..
Ritchie's, Nevis	Ritchie, James ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75	75	..	..	..	..	..	..	..	..	..	..
Stenton's, Nevis	Stenton, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	13	..	..	..	..	..	..	..	..	..	..
Williamson's, Nevis ..	Williamson, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	..	..	..	..	..	..	..	..	..	..
Holme's, Nevis	Holmes, W. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	..	..	..	..	..	..	..	..	..	..
O'Connell's Nevis	O'Connell, W. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	10	..	..	..	..	..	..	..	..	..	..
Watherston's, Nevis ..	Watherston, A. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	5	..	..	..	..	..	..	..	..	..	..
Totals, Middle Island	..	..	..	..	..	..	..	..	..	..	..	..	595995	162648	758,643	8923478	9682121	484	1200	1684							
Totals, North Island	..	..	..	..	..	..	..	..	..	..	..	..	146816½	1573½	148,390	2313770	2462160	72	247	319							
													742811½	164221½	907,033	11237248	12144281	556	1447	2003							

Add output of following twelve 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
Add output of Waikaka, Adams's Flat, and Waimea Mines, inserted twice in statement for 1891..	6,518
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; and 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
	12483646

GEO. WILSON,
Inspecting Engineer.

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