1895.

NEW ZEALAND.

INSPECTION OF COAL-MINES REPORT.

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

No. 1.

Mr. H. A. GORDON, F.G.S., Inspecting Engineer, to the UNDER-SECRETARY of MINES.

Mines Department, Wellington, 29th July, 1895.

SIR,—

I have the honour to forward you covering report on the progress of the coal-mining industry for the year ending the 31st December, 1894.

The output from the mines in the colony for the past year amounted to 719,546 tons, which shows an increase over the previous year of 27,998 tons. This output comprised 418,589 tons of bituminous coal, 102,389 tons of pitch-coal, 170,815 tons of brown coal, and 27,753 tons of lignite. Mining operations were carried on in 148 mines, in connection with which there were 1,899 men employed. During the year there were twenty-three accidents, six of which terminated fatally; of these, two occurred in the Coalbrookdale Mine, one in the Mokihinui Mine on the west coast of the Middle Island, one in the Homebush Mine in Canterbury, and two in the Kaitangata Mine in Otago. Six of the other accidents the men received severe injuries, and eleven of them were not of a serious nature.

I have, &c.,

HENRY A. GORDON, M.A.Inst.M.E.,

The Under-Secretary of Mines, Wellington. Inspecting Engineer.

No. 2.

Mr. GEORGE WILSON, Inspector of Mines, to the UNDER-SECRETARY of MINES, Wellington.

Inspector of Mines Office, Thames, 1st May, 1895.

SIR,—

I have the honour to transmit to the Hon. the Minister of Mines the following report on coal-mining in the Auckland district, made in compliance with section 67 of "The Coal-mines Act, 1891":—

KAWAKAWA DISTRICT.

1. *Kawakawa Mine.*—The Bay of Islands Coal Company worked this mine until the 31st March, when their lease was surrendered, the output being 2,438 tons. Matthews and party, contractors, continued operations on their own account until the 17th April, 1894, during which time the output was 528 tons of coal. The mine was then idle until August, when the New Bay of Islands Coal Company then acquired a lease of 640 acres, and continued the work of driving Matthews's dip. The dip was driven through the pillar discovered last year, and continued through other old pillars towards water-level. The output of coal from this part has been 2,078 tons, and there appears to be sufficient coal in sight to keep up a supply of 250 tons per week for another year at least. Total output for the year, 5,044 tons. Three men above and fourteen men below were employed.

HIKURANGI DISTRICT.

2. *West Bryan's Mine.*—The output of 6,659 tons during the year shows that increased energy has been devoted towards working the mine. This is due to opening the railway to Hikurangi. Another drive has been put in to work the coal under Smith's house, and a commencement has been made to draw pillars by stripping the whole of the cover near the outcrop. The output of 500 or 600 tons per month can easily be maintained above water-level, and it is the intention of the owner to sink a shaft near the main road, in order to work the seam towards the dip of the coal. The output for the year was 6,659 tons. Two men above and nine men below were employed.

3. *Hikurangi Coal Company's Mine.*—This mine was opened on the outcrop of coal, about 7 chains from the railway-line; a portion of the coal was stripped by removing the cover, and drives were put in to the north and to the south side of the coal, which have been stripped; the area of coal

worked is of limited extent, and a commencement has been made to draw the pillars. A self-acting tramway is used to convey the coal from this part of the mine to the platform at the line, when the coal is tipped direct into the railway-wagons. Another opening has been made to the northward of the platform alongside the line, and a considerable area of coal taken out. It is now discovered that the seam to the southward of the platform has been thrown down by a fault, and either a shaft or a dip must be made to work this portion of the seam. It is now apparent that towards the outcrop the seam lies in detached basins of limited extent, and separate openings must be made to work those parts; however, the expense of opening each place will not be great, nor likely to add to the cost of getting the coal. The seam where it has been left on West Bryan tramway looks as well as in any part of the property, and can be readily worked. As far as can be seen there is sufficient coal in this company's mine to continue a large output for years to come. The output for eight months has been 11,801 tons. Three men above and twenty-one men below are employed.

4. *Phœnix Mine.*—This mine is situated on Carter Brothers' land, an area of 77 acres has been leased by Matthews and party, late contractors in the Kawakawa Mine. A tramway, 26 chains in length, and a hopper have been constructed to connect with the railway. This mine adjoins the West Bryan, and was opened by Mr. Smith about seven or eight years ago; but very little coal has been taken out. There is a seam of coal 7ft. in thickness ready to be operated on. No coal has yet been taken from the mine by the present lessees, but as soon as the Railway Department complete a new siding near the hopper a considerable output could be maintained.

5. *Christie's Mine.*—This is on private land; a drive has been put in about 50ft. in length and the coal is 3ft. in thickness. Only a small quantity has been taken out by the owner for private use.

6. Two other leases have been granted in this district: J. Rolleston 250 acres, and Donald McKenzie 200 acres; but as far as I can learn little, if any, prospecting work has been carried on.

Whangarei District.

7. *Kamo Mine.*—Operations were suspended by the Kamo Coal Company in October, 1893, and the mine shut down. Shortly afterwards the main shaft was filled up and the machinery removed.

8. *Kamo New Mine.*—In the beginning of March Renshaw and party opened a mine on Meldrum's land, to work portions of the coal that had been left near the outcrop. Several old pillars have been taken out, and there still remains a quantity of a good class of coal available. It is the intention of the party to open another drive at a lower level to work the old pillars. The output for ten months was 2,972 tons. One man above and five below were employed.

Ngunguru District.

9. *Kiripaka Mine.*—The mine has been steadily worked during the year; the main adit has been advanced, and is now in a distance of 11 chains, whilst a new adit to the northward of the first is in 9 chains. The seam was much disturbed, and in some places only 3ft. in thickness. The coal, however, appears to improve as the workings are extended, under the hill the cover getting harder. The coal is said to be one of the best in the district for steam purposes to be found. Output for the year was 13,655 tons. Eleven men above and twenty-two below are employed.

10. *Panapo Coal Lease,* of 208 acres, is situated on the north side of the Ngunguru River, and nearly opposite the Kiripaka Coal Company's land. Mr Armitage has done a considerable amount of prospecting on the northern side of the Panapo Creek. A drive was put in 60ft., and a seam of coal 6in in thickness discovered. Four holes—93ft., 84ft., 43ft., and 20ft.—were also bored, but no coal found. Operations were then carried on to the southward of the creek; six holes from 10ft. to 27ft. were bored, and an outcrop of coal met with. A drive (12ft.) put in showed a thin seam of coal, which was not further explored, as it was near the boundary of the lease. Another drive was put in 35ft., and the seam met with about 3ft. in thickness. Three men were employed, and a sum of £250 expended in prospecting operations. The 3ft. seam of coal discovered near the boundary of Armitage's land was found in the adjacent land, which is Native land. A shaft, 13ft. in depth, was sunk by Davis and party, the first 5ft. being cover, and the next 8ft. in good coal; yet no mining title has been obtained for this land.

Waikato District.

11. *Waikato Mine.*—This mine has again been steadily and carefully worked. The seam maintains a general thickness of 12ft.; the ventilation is good, and the requirements of the Act complied with. The output for the year was 11,278 tons. Eight men above and twenty-one men below are employed.

12. *Taupiri Extended Mine.*—Operations in this mine have been successfully carried on during the year. The workings have been extended towards the Waikato River, and the seam of coal maintains its thickness, the bords being from 12ft. to 20ft. in height. The shaft and winding machinery is in good order. Safety appliances are used on the cages, and detaching-hooks on the rope. The ventilation is good, and the requirements of the Act observed. The output for the year was 30,426 tons. Eleven men above and fifty men below were employed.

13. *Taupiri Reserve Mine.*—The workings in this mine are carefully carried on. It was found that the extent of available coal to the westward is much greater than at first appeared, the dip of the seam becoming less as the heading was extended. The distance from the level above has increased, and the bords are of greater length. The mine is well ventilated, and the requirements of the Act complied with. The output for the year was 13,877 tons. Eleven men above and thirty-one men below were employed.

14. *Bombay Mine.*—This mine was opened by Mr. Long on his own property. A drive 60ft. in length has been put in on a seam of brown coal, which is about 5ft. in thickness, of which 3ft. is worked. The output is 20 tons. Mr. Long and his sons occasionally work in the mine, the coal being for domestic use, and also supplying the engine at a creamery in the district. The locality is about eight miles from the railway, and at present there is not likely to be a great demand for the coal.

MOKAU DISTRICT.

Mokau Mine.—This mine was not inspected during the year, in consequence of an increase in other work. The output of coal was 254 tons for half-year ended the 30th June. No further return has yet been furnished.

ACCIDENTS.

No accident of a serious nature has been reported during the year. The following is a list of the accidents reported; the injured men were for a time unable to work:—

James Holland, who was injured by a lump of coal falling on his foot in Taupiri Reserve Mine, 10th February, 1894.

Alfred Cadman: Injured by lump of coal falling on his toe; Taupiri Extended Mine, 24th April, 1894.

Robert Colson: Jar to hand while bunking-out; Taupiri Extended Mine, 28th May, 1894.

Frederick Cox: Injury to his hand while at work; Taupiri Extended Mine, 25th June, 1894.

Thomas McQuillan: Injured by pick while at work; Taupiri Extended Mine, 4th July, 1894.

Walter Waugh: Injured by piece of coal striking his eye; Taupiri Extended Mine, 9th July, 1894.

Edward Burke: Injured by wedge falling on his foot; Taupiri Extended Mine, 26th July, 1894.

Thomas Russell: Jar to finger while at work; Taupiri Extended Mine, 10th August, 1894.

Thomas Griffiths: Bruise to arm, concussion of elbow-joint, through coming in contact with a skip whilst escaping from a fall of coal; Waikato Mine, 18th September, 1894.

William Gilders: Struck by piece of coal whilst at work; Taupiri Extended Mine, 24th October, 1894.

Robert Robson, going down incline behind a skip, slipped on a stone and fell; Taupiri Extended Mine, 26th October, 1894.

Charles Gorring Minnett: Rupture of hip whilst at work on bank; Taupiri Extended Mine, 12th November, 1894.

REMARKS.

The output for the districts north of Auckland shows an increase of 5,445 tons compared with that of last year, whilst in the districts south of Auckland the output shows a falling-off of 2,175 tons, leaving a total increase for the year of 3,270 tons.

The increase in the north is due to the mines in the Hikurangi and Ngunguru districts. The increase from the Hikurangi district—18,103 tons—was due to the improved means of transit afforded on the opening of the railway-line to the mine. The increase of 10,958 tons from Ngunguru district is due to the improved demand for the coal, which is giving satisfaction as a steaming coal.

The contributions to the Accident Fund are paid regularly by the different companies on all coal sold. The provisions of the Act are generally complied with in all the mines, and the ventilation is good.

The whole of the mines in the Auckland district are now well opened, and in a position to maintain an output far greater than the present consumption of coal requires.

I have, &c.,

GEORGE WILSON,

Inspector of Mines.

The Under-Secretary of Mines, Wellington.

No. 3.

Mr. N. D. COCHRANE, Inspector of Mines, to the UNDER-SECRETARY of MINES, Wellington.

SIR,— Inspector of Mines, Westport, 25th April, 1895.

I have the honour, in compliance with section 67 of the "The Coal-mines Act, 1891," to report as follows for the information of the Hon. the Minister of Mines, and to enclose statistics of the West Coast Coal-mines for the year ending 31st December, 1894:—

Wallsend Colliery, Collingwood.—(16/6/94):—In No. 1 seam at the top of the incline I measured the ventilating current and found 3,000 cubic feet of air circulating per minute; this is much over the required quantity. In No. 2 seam also the air was good. Four men were working at two faces in the latter seam, the upper part of which, however, has pinched out. In No. 1 seam one man was working. Two miners were also at work cross-cutting from No. 2 to No. 3 seams; the latter had just been cut, and showed only 4in. of inferior coal, so the prospects of work being done in it are poor. Plan kept up to date; but the survey is still made with a prismatic compass, so I requested that it should be done with a more reliable instrument, and such has since been procured. Rules, with names posted in case at mine mouth. The prospects of this mine, owing to the thinness of the coal, are not very bright.

Pakawau Coal-mine.—(14/6/94): This consists of a short cross-measure drift to the coal-seam, and thence two short levels running east and west. The section at the face is as follows: Sandstone roof; coal and shale, 1ft. 4in.; coal, 7in.; inferior coal, 7in.; stone, 2in.; coal, 4in.;

shaly coal, 1ft.; stone, 2ft.; coal, 1ft.: total, 7ft. in height. The seam dips to south at 1 in 3. I requested Mr. Caldwell to have some timbering done at the mine mouth, and to procure a safety-lamp and copy of Act. Granting of permit deferred till the mine is again inspected.

Motupipi Coal-mine.—(18/6/94): This is the old Brownville Mine, which has been given up by Mr. Brown, and is now worked occasionally by Mr. Charles. It is evident that very little work is done. Set of timber at mine mouth requiring to be stayed; this will be seen to. All work has since been stopped at this mine.

Bartlett's Coal-mine.—(18/6/94): The position of this mine is some four or five miles up the Takaka Valley. The seam worked is probably the highest of the numerous coal-seams in this district, and underlies the limestone by perhaps 40ft. The face measures 4ft. 6in. in height, and in this there is a band of stone 18in. in thickness, leaving barely 3ft. of clean coal. The only work consists of a short drive 70ft. in length, in which the timbering is well done, and an old drive near at hand, which has been abandoned as the roof caved in. Mr. Bartlett was doubtful of continuing work as it did not pay, and has since notified me that the mine has been abandoned.

Gordon Downs Coal-seams.—(20/6/94): These outcrop on the northern shoulder of Gordon's Knob, and are exposed by one or two cuts; but no underground-work had been done. There are some six seams, lying highly inclined, and one of these is about 5ft. 6in. in thickness. Although tenders were being called for the removal of a quantity of coal, I understand that no mining has yet been done.

Brightwater Coal-seams.—(7/6/94): Some prospecting has been carried on, but the seams were thin, only a few inches in thickness, and highly inclined, consequently operations have been abandoned.

Westport-Cardiff Colliery.—(13/4/94): No further work has been done at the No. 4 outcrop, which appears to be abandoned for the present. On the main adit, which forms the extension of the tram-line, the coal was cut after 6 chains of driving; thence the seam rises at an angle of 1 in 4½. Some 3 chains have been driven in the coal, which is not very hard, showing signs of movement, and, two or three faults having been met with in the main adit, this coalfield may be expected to be more or less broken. Ten men in all engaged. (12/11/94): Twenty-eight men now employed, and seven places working. The main heading has been driven right out to Chasm Creek, showing a width from where the coal was cut in the adit of 8 chains. This has had the effect of improving the ventilation, which previously had become dull. Mr. Broome is now mine-manager. I drew his attention to some loose pieces on the roof and sides; these are to be seen to. He has since forwarded me a well-made plan, showing the surface also taken up—a thing which is too seldom done on coal-mine plans in the colony.

Mokihinui Colliery.—(21/2/94): The workings in this mine were still continuing under discouraging conditions, numerous veins and bands of stone intersecting the seam, and the coal itself being at places soft and of poor quality. The air of one or two places was poor, but the current in the aggregate was about what is required. The dullness was caused by one or two places having so much stone to contend with that they were not put through. The case did not call for a prosecution, nor would such have been successful. I requested Mr. Shaw to have the places connected, and when inspected again on the 13th of April this had been done, and the air improved. I measured 8,500 cubic feet of air circulating for fifty-one men. (17/8/94): A fire had broken out underground, and had been subdued, but another started a day or two later. Mr. Alexander, who had lately been appointed manager, neglected to notify me early, but explained that this was on account of confusion, consequent on the outbreak. The Westport Fire-brigade turned out willingly, but their services were not required. Water was being pumped into the section where the fire existed, and, as it was to the rise, dams were being put in. These were not likely to prevent the escape of the water, but would prove excellent stoppings. The area affected is a small one, said to be mostly wrought out. The rise in temperature which must have followed the first outbreak would be a most active factor in promoting the second, and ought to have been a warning to exercise extra vigilance. This mine was subsequently idle for some months. At date of writing work has recently been resumed by the Knights of Labour, who lease from the company. It is to be regretted they have not a better field to start with, but promising outcrops lay ahead of the workings. During November some three weeks of my time was occupied in making, in conjunction with Mr. McKay, Mining Geologist, a geological survey and map of this company's leases.

Granity Creek Colliery.—(28/3/94): Only the two main headings working, three shifts of two men in each. Air very good. Act well observed. The coal, however, is tipped in the gully, and is being carried away by floods. During the most of the year mining has been discontinued, pending completion of the extensive surface-works. (20/12/94): Tramway reserve: After going over the ground no objection was apparent to this being granted. Mr. Brown informs me that the idea of a locomotive line has been abandoned.

Coalbrookdale Colliery.—(30/1/94): In the Big Dip section, the workings are now in the lower seam, but the faces towards the north-west are mostly stopped, owing to bands of stone coming in. These seams are being wrought in their proper sequence, for, if the lower one were worked first, it would shatter the upper coal, and also render the already bad roof too dangerous to work under. Air rather better than at last visit, 12,000 cubic feet circulating, but two or three faces still in advance of it. Thirty-two faces were working, employing fifty-four miners and fourteen truckers per shift. The new mine and Murray's Creek section employ thirty-eight men in all, including those at pillar-work. In the Cascade section twenty-six miners and truckers were employed in two shifts. These were in good order, and had plenty timber supplied. One set badly secured; on my drawing attention to it, it was ordered by Mr. Cameron to be seen to at once. These sections were also inspected on the 31st May, and it was clear Mr. Brown, who was in charge for the time being, was exercising special care for the safety of the mine. (30/11/94): Muncey's dip-heading is now driven 11 chains, and is intended to be the drawing road for the new area. Air, near the back

heading, rather warm, but fairly fresh throughout the faces. Spragging attended to. Timbering, as a whole, well done, but one or two sets might be better put in. Thirteen places working in this section, and five in the new mine district. Cascade section: Nine places working. Air fairly good. Powder-smoke hanging in an advanced face, but this should hole through to-day. In the Big Dip section twenty-three faces are working. One or two sets of timbering to be improved in setting. Air not quite so fresh as to be expected with so strong a ventilating current, which is now by fan. Another stopping will be put in. New area Coalbrookdale: This was applied for with a view to driving an incline to drain the Cascade section in which the dip-heading faces are standing on thin stony coal. Much of this will be without workable coal, and what there is is better to be worked now than left with a waterlogged area to the rise, as would otherwise be the case. Fourteen chains of driving have been done at date of writing, and several faults intersected.

Ironbridge Colliery.—(18/1/94): Mine not working. In the main dip, which is in the lower seam, the air was not good, but it should hole through into the place which is meeting it in a day or two. Set of timber where starting to go into the lower seam requiring to be braced; this will be seen to; also, some bad places in roof. This mine was also inspected on the 1st June. (29/11/94): The shaft section is being reopened to keep up the output at times of sudden demand. The coal, which is 20ft. thick to start with, gradually thins to 4ft. 6in. when followed to the east, being cut out by wedges of fireclay. In the lower seam there are fourteen places, but no work was doing throughout the mine, which was idle for the day on account of want of trade. Some sets requiring bracing; these Mr. Milligan will see to. The Gentle Annie district has not been working for a month. In the workings from the big jig twenty men are usually employed at pillar-work. Air good. Work apparently being carefully done. A fan is in course of erection; this will improve the air in the advanced districts like the Gentle Annie, where it was required. For both Coalbrookdale and Ironbridge Mines the reports have been duly kept, and the rules with names posted. The plans have also been duly posted, but have not been accurately kept, as succeeding tracings have shown. An improvement is now being effected by Mr. Lindop.

Waitakere Coal-mine.—(18/5/95): No work being done at present. Still open-cast, and face not overhanging.

Whitecliff's Coal-mine.—(30/8/94): The old mine is not working, but Mr. R. Lloyd is putting in a short drive on an outcrop on the opposite side of the road. Bad roof. Mr. Lloyd shortly afterwards abandoned this mine, but work in it has lately been resumed.

Alexander Coal-mine.—(22/6/94): The wall-face is now 30ft. long, and the distance back to the filling is 15ft.; the level-face is not working. Plenty of timber is used. Air good. Mr. Rear is still in charge, and keeps report. This coal-seam measures only 2ft. 6in. in thickness, including a band of stone 6in., leaving only 2ft. of clean coal. A lower seam, which is rather thicker, is intended to be opened up.

Murray Creek Coal-mine.—(10/9/94): Mr. T. Bolitho working alone. Adit not in good order, and roof at places bad. Mr. Bolitho intends timbering the level and packing between the pillars, which have been left too thin. He applied for a permit, but I deferred granting this till the mine was put in better order. (9/10/94): A good deal of timbering has been done, but more is required, and packing also. I informed Mr. Bolitho he would have to stop working if these were not attended to. (7/12/94): Mine in better order, and Mr. Bolitho still going on with repairs.

Golden Treasure Coal-mine.—(10/9/94.): A new level has been driven in the coal not far from the old one. Mine in good order. Mr. Davidson, however, although an experienced coal-miner, was holing without a sprag, the place being very narrow. I cautioned him, and one was put in at once. Copy of Act at mine. Report kept.

Phœnix Coal-mine.—(10/9/94.): Set of timber near mine mouth requiring to be stayed; this will be attended to. The coal-seam still continues very thick. Air good. Powder kept out of mine. Copy of Act and report of examinations kept. A little work is being done by Mr. James Bolitho at the upper part of this lease. Bar required at shoot; this will be put up.

Lankey's Gully Coal-mine.—(9/10/94): Mr Lamberton was holing without a sprag, but on my cautioning him one was at once put in. Air fairly fresh. Coal still keeping of fair quality. I drew Mr. Lamberton's attention to the roof not being good at the fault in the level, and this is to be looked after if work is continued, but it is intended to put in a new drive. Powder now stored outside. Report kept, but a week behind.

Reefton Coal-mine.—Work has not yet been resumed in this mine.

Cochrane's Coal-mine.—Work has been stopped in this mine during the year.

Progress Coal-mine.—(13/2/94): Two men working in a place which is rather too wide, but it will be kept narrower in future. Air good. Roof bad, but sufficient timber; some places to which I drew attention are to be taken down or secured. (14/9/94): Not working for a fortnight. A well-made plan has since been forwarded me by Mr. Black.

Breen's Coal-mine.—(12/2/94): Work was started in what is thought to be a lower seam lying highly inclined, and two short drives put in, but these have been abandoned as the coal turned out too soft. About 100ft. to the south-west another seam, 4ft. in thickness, has been opened up. This one has a bad roof, but the level is driven narrow. Air good, as there is a second outlet. No copy of the Act. (11/9/94): Two men working. The level has been extended, and from the inmost heading an air-course has been driven to the outcrop, so the air continues good. Plenty of timber in the headings, but the level at places was requiring attention, as the roof is still very bad. Mr. Breen will see to this at once. A copy of the Act has been procured.

Sir Francis Drake Coal-mine.—(11/9/94): This mine has been only worked for the supply of the battery, and at above date no one was about. At date of writing it has been abandoned, and a new mine, also worked open-cast, has been started on the opposite side of the road, some 12 chains distant.

Cumberland Coal-mine.—(7/3/95): No one about, but two strong cribs have been put in where I had found the workings too wide. Air very good, as there are several holings out to the surface. The roof is not a good one. Mr. Pilling appears to be working back, leaving goaf behind him.

Coghlan's Coal-mine.—(14/2/94): Next to nothing has been done since last inspection; the coal required in Boatman's district being now supplied by Archer's Mine.

Archer's Coal-mine.—(14/2/94): The men were away carting coal. Work was evidently being done in two short levels off the dip-drive. (8/12/94): Only Mr. Archer himself working in bottom level. Air good; mine in fair order.

Dawson's Coal-mine, Waitahu River.—(8/12/94): A little mining has been done near the river, but no one was about. I understand it was intended to open up a mine to supply the Russell battery, but coal having been found in a more convenient position, work in this mine has been discontinued till it is seen how the nearer coal turns out.

Blackball Colliery.—(11/7/94): All the workings are now on the west side of the main headings. Those to the east were discontinued as the former turned out better coal. I drew attention to some of the timber in the west level not being well set, and this is to be seen to. The air has been allowed to fall slightly under the required quantity towards the faces, although the intake shows a large supply, much of which is lost at the bratticing. This will shortly be put right, as the main heading is up about 20 chains, and is expected to hole-out to-day in a further distance of two chains. Firedamp has never been seen, and there are no dry or dusty places in the mine, although it is not so damp and wet as formerly. Plan duly posted, and report kept. Three shifts are working, employing seventy-two men in all. (23/8/94): Mine in fair order. Mr. Scott, the new manager, although holding the English certificate, not having placed himself on the colonial register, an information was laid against him, in compliance with your instructions, and a fine of 5s. was imposed by the Magistrate at Greymouth. (12/12/94): Mine not working to-day, owing to want of orders, trade having been very dull for some time. The bottom 4ft. of coal is now being left, as it was found to be too soft. A fair current of air circulating, but more being required when the weather is unfavourable for natural ventilation; a furnace with a short chimney is in course of erection at the outcrop on Coal Creek. This cannot be looked to for a large supply of air, for, there being no shaft, its motive-power will largely depend on the height of the chimney or stack. About ninety-five men find employment when the mine is working. Mr. Lindop reported two accidents during the part of the year he was manager; these are referred to further on.

Brunner Colliery.—(9/1/94): All the workings in this mine are now from the dip-drive. Fourteen places are working in the solid, only one of which is on the Coal-pit Heath side of the incline. Spragging does not appear to be so strictly observed as formerly. I drew Mr. Bishop's attention to this, and he will have it seen to. Roof more irregular, and rolls more frequent than usual; some loose places I spoke about are to be attended to at once. Six places at pillar-work, employing twelve men, making with the faces a total of thirty-nine miners per shift. Three shifts are working, but one of these is to be stopped shortly. On completion of the new tramway, now being constructed to open up the coal to the rise of the old Brunner workings, those miners will be put on there. A good current of air circulating; this I measured at over 11,000ft., but the lower workings do not get their full share of it. I had formerly spoken about some of the exhaust-steam, in certain directions of the wind, being drawn in at the mine mouth; to prevent this a screen has now been erected. Reports kept, and plan posted. (5/5/94): In the dip-workings there is still a little water laying at the face of the incline, the section of which shows 2ft. 9in. of coal, underlaid by unsaleable hard coal, then coaly micaceous stone. Five places working on the Coal-pit Heath side of the dip-drive, and seven on the further side from the lowest level, twelve places from the middle level, and four places at pillar-work following the other workings, so that this section of the mine is being rapidly exhausted. (13/7/94): The lower level is now in a distance of about 28 chains, much of which has been driven to prospect this part of the field. For half a chain back from the face it is under water; but, where seen, the coal measured 1ft. 8in. in thickness, with 1ft. 2in. more of hard unsaleable coal, known as "black bottom," then the stone floor. This mine was also inspected in October. (13/12/94): The only work doing is the extension of the dip-drive by the contractors, the other workings being idle for want of trade. The contract is for 500ft., to prospect this portion of the field, and at the above date 130ft. had been driven. The coal measured 1ft. 6in. thick at the face.

Brunner Rise Workings.—(4/5/94): This is the so-called 20-acre block, but the line of thinning of the coal met with in the lower workings not having been proved in this part of the field the area may be very much larger, and I have very little doubt but it is. No doubt there is always the liability to dislocation by faults, but, owing to the general regular elevation of the floor of the coal-field to the rise, the breaks are likely to be of less amount. The new incline to open up this area is now completed; it starts from the top of the short incline formerly used to lower fireclay, and runs underground a distance of 16 chains, thence in the open for 14 chains. The average grade is about 1 in 5½, and the haulage is on the ordinary self-acting principle, with a 6ft. drum and strap-break. From the drum to the mine mouth there is a distance of 8 chains of level tramway, along which the haulage is done by horses. The mine was not working for the day on account of bad air, as the connection with the shaft had not been made. (5/5/94): As the air was still very dull I requested Mr. Bishop to knock off all the miners in this section who were not driving to make connection; this was done before I left the ground. There are in all nine working-faces in this mine. (13/7/94): Fifteen places working. Air now good in all places except the heading, where it is a little dull. Well timbered, and spragging observed. This mine was also inspected in November, and, although some stone veins are showing, more especially in the rise places, it can be considered as turning out well. Rules posted; reports duly kept; no accident sufficiently serious to be reported by Mr. Bishop occurred during the year.

Coal Creek Lease.—The railway is still being gone on with, about three miles of the formation having been completed from a point about a third of a mile from Cobden Bridge, out towards the coalfield. A bridge is intended to be constructed over the Grey River. At present some of the small bridges are being built. Some little prospecting has been done, but no mining. The former ought to have had more attention paid to it, in order that the field should be opened at the proper place. At date of writing Mr. Bishop informs me that the work of prospecting is now being proceeded with, in which four men are employed. He also states that some £12,000 has been expended on labour and material.

ACCIDENTS.

The following accidents have been reported to me by the mine-managers during the year:—

1. 10th January.—Coalbrookdale: A miner named William Hedley was injured by a fall of timber, and died the same night. He had returned to his working-face after firing a shot, which in all probability loosened the set of timber, and the powder-smoke would prevent this being easily seen.

2. 24th February.—Coalbrookdale: A youth named Silvio Martini got his leg broken through the pin of a clip breaking and allowing the truck which he had just clipped on to run back on him. He died from the injuries the following day. Evidence was given at the inquest that the clip and pins had been examined.

3. 17th April.—Mokihinui: A miner named William Stirt sustained a fracture of the ribs by a fall of roof.

4. 12th May.—Ironbridge: A miner named Robert Gibson was killed by a fall of coal in pillar-working. There were some strong joints in the coal at the place, and it probably slipped on one of these as the timber was thrown out.

5. 24th May.—Blackball: A miner named Robert Greenshields had his arm dislocated at the shoulder by a fall of coal when holing. The coal had fallen out underneath the sprag.

6. 26th May.—Blackball: A miner named George Nuttall was struck on the eye by a piece of coal flying from his pick point.

SICK AND ACCIDENT FUNDS.

Contributions to the above funds are being paid by all the larger mines and by most of the smaller ones.

GENERAL.

The fatal accidents at Coalbrookdale, each of which was carefully investigated, and no breach of the law disclosed, having continued, and the workings having become more extensive and further apart, I thought it desirable under special rule 1 that there should be separate managers for Coalbrookdale and Ironbridge Mines, but Mr. Cameron did not seem to fall in with the idea. The question was subsequently gone into with Mr. Joachim, the general manager, who exhibited every anxiety to provide for the safety of the men.

Mr. Lindop has since been appointed next to Mr. Brown, with Mr. John Green mine-manager at Coalbrookdale, and Mr. N. Milligan mine-manager at Ironbridge Mines. Both the latter are experienced practical miners, who have passed the examination in the colony and gained first-class certificates.

Regarding the Brunner Mine, Mr. Bishop informs me on 9th April that 1ft. 6in. of coal is the thickness of the seam in the face of the prospecting-drive, so the thin coal must be of considerable extent.

I have, &c.,
E. D. COCHRANE,
Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

No. 4.

Mr. JOHN GOW, Inspector of Mines, to the UNDER-SECRETARY of MINES, Wellington.

SIR,— Dunedin, 30th March, 1895.

I have the honour, in compliance with section 67 of "The Coal-mines Act, 1891," to report as follows, for the information of the Hon. the Minister of Mines:—

My remarks on the several mines in my district will be found to follow my list consecutively, commencing at—

CANTERBURY.

1. *Springfield Mine.*—(25/7/94): The seam, now 3ft. 6in. at the outcrop near the pottery-works, is still being worked almost exclusively for the use of these works. There are only two men hewing coal, and they are not employed full time. They were not working on the day of my visit. I found the top-heading fairly well timbered and the roof good, but the timber in the lower end of the dip-drive was considerably canted, and threatened a collapse. I gave instructions to the lessee to have this part at once put into a safe condition, or have the men withdrawn and allow it to close.

3. *Sheffield Mine.*—(25/6/94): The coal is now being hauled by a horse up the new tunnel on the upper side of the old shaft, from which it is a short distance away. The drainage from the new workings is allowed to flow into the old workings and to the shaft, which is not just now used in any way whatever. In consequence of a constant drainage coming into the mine from the hillside all the truck-roads are very dirty and sloppy underfoot. The coal-seam has still the 2ft. band of sand in the centre. The roof is remarkably even and smooth throughout the mine, and fairly well timbered. In the worked-out ground the centre band and other refuse are stowed away, which

nearly fills it up to the roof. A new airway is to be made at an early date; just now the air is good.

4. *Homebush Mine.*—(26/6/94): Examined all the working-places, and found them in good order. I pointed out to the manager two or three places in the levels where I thought some timber was required, or the roof brushed down. I also pointed out a spot in the horse road where shoring from side to side was necessary to make it safe. I measured the intake of air, and found there was more than is required by the Act.

5. *Whitecliff's Mine.*—(27/6/94): The new pit is a little higher up the valley where the dip-tunnel to the coal has been completed since my previous visit. The coal is 26 yards down from the pit-mouth, and dips 14in. in the yard. The coal—7ft. thick—was followed down 50 yards, where it became very much broken up, and the crevices filled with dark clay and mud. Levels were opened to the right and left much higher up the dip, where the coal is more solid and cleaner. The level on the right-hand or south side is driven 6 or 7 chains, where there is very good coal in places, but there are blocks lying up and down with the dip that are very much cracked and dirty. Some of these blocks are left behind, as the coal is hardly saleable, even when washed. The level to the north has been driven 6 chains to test the value of the coal in that direction, and it is found to be nearly all small and dirty, with a bad roof. There is a 3ft. seam of coal 4ft. overhead, and at a depth of about 25ft. underfoot there is another seam of 4ft. thick, which is said to be the best coal in the leasehold. This lower seam has a soft sand roof. Mr. Leeming thinks the fossil-rock is likely to be met with at 25 yards below where he stopped sinking on the seam. An 8ft. water-wheel at the pit-mouth does the pumping easily, and the head-race is only a mile in length, with enough water to do the work all the year through. All the coal is washed to a certain extent in the boxes, which are placed for a few minutes under a splash in front of the water-wheel. In this simple way the bulk of the clay is removed. I have asked Mr. Leeming to brush down the roof at the junctions of dip and levels, and to put in much higher timber, in order to give the men plenty of room overhead when hitching the boxes to the winding-rope. The working-places are in fair order, and the air is good.

9. *Lake Coleridge Mine.*—(15/1/95): A few tons of coal have been hewn out since my previous visit and stacked at the pit-mouth ready for carting away to the station. Examined the working-places and found them in a safe condition. The proposed prospecting-tunnel has not yet been started.

10. *Mount Somers.*—(12/6/94): I am pleased to state that this mine has changed hands since the early half of last year. A. G. Harris sold out to G. Park, who professes to be most anxious to comply with the Act, and to do all as advised for the safety of the men and the mine. H. Livick (mine-manager) has promised me not in any way to interfere with the old pillars, which have heretofore been robbed from time to time till they are dangerously small quite handy to the present workings. Some of the weakest parts have been retimbered quite lately, as also along the main roadway. The present working-places are in good order.

11. *Albury Mine.*—(12/7/94): I found the owner, Mr. Rutherford, at the pit, and learned from him that since my previous visit a shaft had been sunk in the coal from the floor of the first level to a depth of 16ft., or 40ft. level, and a second level tunnel driven in the coal to the eastward about 2 chains or more, taking out about 8ft. of coal near the centre of the seam—the side-walls were not touched in that distance. The top level was also driven to the eastward a distance of 4 chains, where an upcast shaft was excavated from below, through 43ft. of coal and 12ft. of surface-clay. The thickness of seam where tested is said to be 21ft. At the time of my first visit the drainage was being pumped by hand. Since then a water-race, three-quarters of a mile in length, has been cut to the pit from a small creek close by, and a water-wheel about 5ft. in diameter has been erected close to the pit to do the pumping, which work it does very easily. The drainage, though not great, is supposed to come from the small creek where it crosses the seam close by. With care in working the mine I think the most of the present drainage could be confined to the level now pumped from. I did not find any coal-hewers working in the mine, and was told that very little had been done since my last visit. There is, however, some prospect of a fresh start being made shortly.

13. *Studholme Mine, Waimate.*—(14/7/94): I called on Mr. Cameron (manager of the Studholme Estate), and learned from him that there was no one at the mine, and that no coal-hewing had been done for some months past. A quantity of coal previously hewn down and left in the pit has been carted to and is being used at the homestead. I did not think it necessary to visit the mine.

14. *McPherson's Mine, Waimate Forks.*—Having received a note from Mr. D. McPherson that there was no coal-hewing going on at his pit, nor had there been for some months past, I did not think it necessary to visit it.

North Otago.

15. *Wade's Awakino Mine.*—(4/6/94): The coal—a vertical seam—is reached by an adit, 3½ chains in length, driven from the foot of the terrace, on the west side of the Awakino Stream. The seam is being followed northward on two levels, the lower one of which is now driven to a distance of about 5½ chains. The seam at the end of the present workings is not so thick or so good in quality as it was at the end of the adit. It has, in the 5½ chains, thinned from 20ft. to 13ft., and is very uneven in the walls on both sides. Lumps of stone are now frequently found through the coal. I found fault with the condition of the timber in one particular place in the adit, and brought Mr. Scott, the manager, from his working-place to see it. I did not think the adit safe, as several of the caps were broken, and some of the legs were canted, so much as to be dangerous. It was evident from measurements of adit taken by me that it was gradually closing in at the sides, and being crushed down by the broken ground overhead where a small seam of coal had been worked some time ago. I requested Mr. Scott to at once retimber the part pointed

out to him as dangerous, and, on finding there was not sufficient suitable timber at the pit-mouth to make more than two sets, I requested him to at once procure what was required, and put the adit in good order as early as possible. This he promised to do. I subsequently sent him a written notice to put the adit in good order, stating I would return in a few days to see if it were done. I returned on the 4th June, and found that only one of the old sets of timber had been straightened up, and that there was not any more timber at the mine. I thought nineteen days more than sufficient time to do what was required, and found out that the timber had not been even ordered. Mr. Scott was brought to Court on the 29th June, and fined £5, and costs £7. Mr. Scott assured me on the Court day that he had renewed most of the old timber in the adit, and that it was now in thorough good order from end to end.

16. *Phillips's Awakino, Kurow.*—(16/5/94): There was no work done in this mine for some time after Irvine's death. Phillips is now hewing a little coal himself in a level 20ft. below the old workings, where he is leaving a strong coal roof of 10ft. or more. The coal is very solid and hard, and in the mine is not effected by the air; therefore the pillars and roof are in splendid order. I think the seam is about 30ft. thick, and standing on edge. The air is good.

17. *Cairns's Wharekuri Mine.*—(15/5/94): The mine is being worked on the same level as it was on my previous visit—viz., the fifth gallery, at 150ft. below the outcrop on the surface. I found the main level walled up to the roof at a spot said to be half its total length. Cairns told me that some part of the old workings overhead was on fire near the upcast shaft, down which the fire was falling into the lower workings, consequently the south part of these was blocked off to prevent the fire putting the men out of the mine. Some part of the old workings was on fire five or six years ago. Probably the fire has been smouldering all these years, and freshened up near the air-shaft.

18. *Collins's Wharekuri Mine.*—(15/5/94): This mine is being worked on the same level as at the time of my previous visit, and on the south side of the adit. On the north side a dip-drive follows the seam to a depth of 25ft. below the level of the last year's workings. The coal continues about the same thickness—viz., 25ft.—and only the centre of it is supposed to be taken out, but at one spot on the east side insufficient coal had been left to bear the weight of clay, and the result was a large cave-in of loose rubbish. The cavity is now faced up with filled sacks placed end on to the side, which will keep the dip open till this level is worked out.

19. *St. Andrews Papakaio Mine.*—(18/5/94): I did not find any one at the mine, but I examined all the working-places and found them in good order, and the air good. At the junction of the main level and one of the headings I noticed the side coal much cracked and likely to come down. I therefore called at the house where the men live, and requested them to at once remove the cracked coal.

20. *Prince Alfred Mine.*—(18/5/94): The roof in the working-places is very good just now, and the coal is more solid than it was at the time of last visit. There is not, however, anything in view that may be considered a lasting improvement. The adit is very low in places, and requires brushing down a bit to give head-room.

21. *Ngapara Mine, Ngapara.*—(14/4/94): Quite lately a low-level drain-tunnel has been driven from near the mouth of the pit to the first of the old workings, where the drain is about 8ft. below the floor. From this point an open cut will be made, and probably drain-pipes laid and covered as the workings extend to the dip in the hill. The mine was quite dry till the roof caved in a few months ago, and at that place there is now a constant inflow of water. The seam where above the present drained level is now being worked, and the drain-extension will be carried on from time to time when the coal trade is slack. The length of drain when completed will probably be 800ft., and this will be 200ft. beyond the old workings in the mine—assuming the inclination of the seam to continue the same as where working. The mine is being carefully worked and the working-places well laid out. Plan of same furnished up to December, 1893.

22. *Rosebury Mine, Otepopo.*—(3/6/94): This mine has lately changed hands, Alexander Love having disposed of his interest to George Smith and J. Stewart, who are now working it. I examined all the working-places and found them in good order. It is the intention of these men to do some prospecting by driving on the seam towards the south, where it is now thin, in the hope of finding it thickening in that direction. They are now driving a heading south-east to get round a roll in the floor.

23. *Early Bank Mine, Otepopo.*—(3/6/94): John Willitts, after a considerable expenditure of labour in opening this mine, could not find a sufficiently thick seam to pay for the labour of getting it, and had at last to abandon the mine in November last. Nothing has been done since then.

24. *Shag Point Mine, Shag Point.*—(25/7/94): Went down the main shaft to the 450ft. level, where a main level has been driven seaward about 727ft., intersecting the No. 2 seam of coal, which is here 2½ft. thick. No. 3 seam is 3ft. 9in., and is intersected in the same level at a distance of 430ft. from the shaft. Both these seams are of good quality. Running parallel with the main level is a return airway up to No. 3 seam in the old workings, going to the Boat-harbour. The cross-cuts from the main level are at present very wet overhead, but the roof is of a good standing character. From the main shaft, following the same level 176ft., the No. 4 is intersected and followed south towards the No. 2 shaft, joining the northern workings of the same. This junction causes a good current of air between the two shafts. Most of the coal-hewing is going on near the No. 2 shaft, where the No. 5 seam of 3ft. is being worked. This coal has also a fairly good roof. The new pump plant is being got ready to be sent below, and the bedplate of engine and pump is now being fixed in position at the 450ft. level, and likely to be in working order in two or three weeks from date.

25. *Allandale Mine, Shag Point.*—(3/8/94): Accompanied by the manager, I first went through the lower-seam workings, where the coal is at present 3ft. 8in. thick, and thickening to the dip eastward. We then went through the return drive to the 7ft. seam, where I saw all the working-

places. We then passed into the upper seam, through a stone drive, at the end of which the coal is 3ft. 6in. thick. Going north a distance of about 3 chains, a 3ft. 6in. seam of coal comes in overhead, and gradually the shaley clay between the seams cuts out, and the two seams coming together make a good 7ft. seam of clean coal. This has been followed for 10 chains, along which distance there are three jigs placed 40 yards apart. Returned through a stone drive to the middle seam, and then through the trap-door to the main haulage road. The roof is generally very good, and the air is good throughout the mine.

SOUTH OTAGO.

26. *Fernhill Mine, Abbotsford.*—(14/8/94): The manager was in Dunedin at the time of my inspection. I examined all the working-places. The work simply amounts to splitting some of the larger pillars in parts of the mine, some distance apart. I did not think one of these places very safe for the workmen, and on visiting the mine again the next day I found that the men had been removed to another place. I understand it is the intention of the owners to push on a prospecting tunnel—already driven some distance—through the large body of soft coal known to exist in the north side of the present workings, with a view of finding good hard coal some distance ahead in a large block of land not yet tried, many places in the old workings were being made secure with very strong timber.

28. *Freeman's Mine, Abbotsford.*—(14/8/94): The manager, Mr. Green, was in Dunedin at the time of my visit. With the overseer I went through all the workings, and found, as usual, most of the working-places and some parts of the main roads crushing in at the sides, or being considerably reduced in height by the floor rising, which has to be continually dressed down for some chains in length to keep the mine open. A part of the mine took fire a short time ago, and was prevented from spreading through the workings by a spray of water from a jet on a long line of pipes laid into the mine from the surface. The locality of the fire was then quickly bricked off from the main road and the working-places, and is now being examined several times during the day- and night-shifts. I found the brick-stopping very warm. I did not find the air-current as good as it should be, but the work now in progress, which will be completed in about nine days, is to remedy this defect. Since my inspection of the mine I have written to the manager about the insufficient air at the time of my visit. Some of the pillars in the furthest workings from the pit-mouth are now being taken out, and the roof allowed to settle down behind the men.

29. *Walton Park Mine, Green Island.*—(13/8/94): Examined all the working-places in the mine. The principal part of the work just now is on the new extension, going east from the shaft, and equal to 16 chains in length in a straight line. The seam here is 15ft. thick, and the last 2 chains driven is nearly on a dead level, which is something new in this mine. The coal is very hard to hew in this part of the mine, and, with the thickness of coal roof left, should stand well. The air-current I found to be 8,100ft. per minute, for thirty-four men in the mine. Everything appears to be in good order.

30. *Saddle Hill (Christie's) No. 2.*—(10/8/94): A new air-shaft has been sunk in the solid coal near the present workings, and an airway driven to it. The air-meter registered over 3,000ft. per minute, which is much more than is required by the Act for the number of men employed. The shaft went through over 30ft. of good coal, of which there are only from 10ft. to 12ft. being taken out. The pillars are 14ft. square, and very solid. All the old workings throughout the mine are in splendid order; no roof down anywhere, and the sides are nearly in the same state as they were when the coal was first hewn out, many years ago. The new working-places are in good order. A new dip-drive is now being driven from the old workings to the south-east to test the value of seam in a new district. There will be a little water to contend with in following the dip.

31. *Burnwell Mine, Green Island.*—(10/8/94): This is a new mine, situated between Christie's and Bryce's pits. The coal is from 60ft. to 70ft. below the surface, and is reached by a dip-tunnel driven into the hill, and going to the westward. The seam dips to the south, and has a good hard floor. There appears to be 15ft. of good coal, of which from 6ft. to 7ft. only are being taken out. This leaves a very strong roof. The working-places are dry, and the little drainage coming into the mine is from the incline. The workings are in good order.

32. *Glenochiel Mine.*—(10/8/94): Most of the coal-hewing is now being done in the east side of the incline. A drive going eastward and following the contour of the floor of the coal has nearly reached the outcrop. There is a large body of coal left overhead for a roof, and only from 6ft. to 7ft. of coal is being taken out. The air-shaft is in good order, and the air is good throughout the mine.

33. *Brighton Mine, Brighton.*—(11/8/94): The workings have been much extended during the past twelve months, and the coal has increased in thickness from 4ft. to 9ft., going to the eastward. A strong coal roof is now being left in that direction. The pumping and haulage is being done by horse-power.

34. *McColl's Mine, Brighton.*—(11/8/94): I did not find any one at the pit. I, however, went through the mine, and found only one place where coal had been lately hewn. The seam is only about 3½ft. thick, with a very bad roof. In some of the old workings the roof has fallen in. The incline is very drippy overhead, and the roof is very soft.

35. *Mosgiel Mine, Mosgiel.*—(9/8/94): The present workings are on the east side of the engine-plane and about 6 chains from same. A portion of this section of the mine is found to be soft coal of little value; but, so far as is yet known, it is confined to the immediate vicinity of a roll in the seam. The useless area may be estimated roughly at 30 yards wide by the length of the fault. Good coal is found at the other side of the fault, where the seam varies from 10ft. to 15ft. thick, and of which there are about 7ft. taken out. The working-places are about 10ft. wide, and the pillars are 14ft. by 48ft. A copy of the regulations is posted up in the mine. The air is good, and the workings are dry.

36. *Bruce No. 2 Mine, Milton.*—(25/7/94): The raging fire in Young's old workings at the time of my previous visit has now reached Hardwick's workings and adit-level, and has driven him out of the pit. I have reason to believe he did all that lay in his power to block off and stop the fire getting to his ground. The area of coal burnt since the fire started is considerable, and unless water it brought on to the spot to extinguish it the fire is likely to spread and follow the seam as long as there is a block of coal to burn in the locality. The lessees of the Coal Reserve appear quite indifferent to the destruction going on, and, as far as I can see, not the slightest attempt has been made by them to stop the fire spreading or put it out.

37. *Real McKay Mine, Milton.*—(25/7/94): Nothing has been done in the old mine since it took fire. Some little distance to the west of the old pit, and quite handy to the road, a seam of coal was known to exist; but very little was known about it. Since the fire Mr. Young has driven a tunnel some distance in this coal from the front of the terrace. About 6ft. of the seam is taken out, leaving between 3ft. and 4ft. overhead for a roof. I did not find any one at the pit, and the bad state of the road would prevent any coal being removed for some months to come. The coal seam appears to be nearly level, going south-east, and rising slightly to the east or north-east. The tunnel is timbered all the way to the face.

38. *Jones's Mine, Coal Creek.*—A year's output from this pit does not alter its appearance much. The coal is being hewn down to the same level as it was last year, and I did not see any preparations being made to test the depth to the floor of the coal.

39. *Mrs. McPherson's Mine, Roxburgh.*—The tunnel referred to in last year's report has only lately reached the coal. Its construction proved a troublesome and costly job. The white clay in which it is driven all its length proved to be too heavy for the stone wall built up between each set of timber, and consequently the walls and clay came into the tunnel in quantity, all of which had to be removed to the outside, and the sides of the tunnel made secure by timbering, which is now done all its length up to the coal seam, at a depth of 32ft. below the old pit-floor, where a body of coal nearly 2 chains square has already been removed. The tunnel has not touched the bottom of the coal, and it is not yet known how much coal there may be below this level. The opencast is in good order.

40. *Craig's Perseverance Mine, Coal Creek.*—Since my previous visit Mr. Craig has discontinued the open stripping, and during the past six months has been getting his coal by tunnelling into the seam from the open face near the pump-level. I found a considerable amount of underground work done, by bord and pillar, from east to west, which exposes what appears to be a vertical clay bank on each side of the seam. If the coal proves to be standing on edge, I think it is more than likely it will prove to be 100ft. thick. The next twelve months' work should bring to light the lay of this large body of coal. The pillars are fairly large, and well laid out to stand till it shall be known how it may be worked to the best advantage.

Central Otago.

41. *Alexandra Mine, Alexandra.*—(22/11/94): There are still the three working-places in the mine, notwithstanding two new pits having been opened in the locality since my visit last year. The current of air is now good, and I think the top of the upcast shaft has been better looked after since the discovery of the old sacks covering last year. The coal roof throughout the mine is in first-class order.

42. *Lett's Macqueenville Mine*—(22/11/94): There are now three men employed in the mine, and 6ft. of coal is being hewn out to a smooth parting in the roof. When any of the coal is left below the parting it is found in time to sag down, when it has to be removed. The mine is in good order, and the air is good.

43. *Enterprise Mine, Alexandra.*—(22/11/94): This is a new pit at Alexandra, and only a short distance to the eastward of Lett's mine. The coal is not so clean as that in the old pits: a stone band from 9in. to 18in. thick comes in the centre of the working-place. There are three working-places started, but they are not many yards in from the shaft yet. The shaft is not the size it should be to comply with the Act. The ladder is fixed in a vertical position, because it could not be otherwise fixed in a shaft only 4ft. by 3ft. The owner, Mr. Rivers, states that he did not know anything about the Coal-mines Act, and made his shaft similar in size to the old shafts close by. I think mining operations in this pit will be on a very small scale, and possibly for a short time only. I have therefore not yet demanded compliance with the Act.

44. *Findley's Mine, Alexandra.*—(22/11/94): This is also a new pit at Alexandra, and is about 40ft. deep. It is situated between Thomson's and Lett's pits. The shaft is similar in size to the other two, and has also a vertical ladder. Mr. Findley, the owner, makes the same excuse as Mr. Rivers for not complying with section 47 of the Coal-mines Act. I have not yet ordered the alterations to the shaft to comply with the Act, for the same reasons as stated *re* Rivers. (I have quite lately received a notice from Findley that he has abandoned the pit.) The drainage in this is much greater than in any of the other pits in the locality. The height of coal taken out is from 5ft. to 6ft., and not of the best quality. The roof is good.

45. *Dungey's Pit, Cambrians.*—The stripping is 10ft., and all gravel. The thickness of coal is also about 10ft., and of very good quality. The full thickness of seam does not extend to the north from the present workings, but the full thickness is being followed to the eastward. There is no water, and the pit is in good order.

46. *J. R. Jones's Welshman's Gully Pit.*—The stripping is still being continued in the old style, notwithstanding its getting deeper every year. A short time ago a tunnel was started in the face of coal, which was followed on the dip to the west a short distance, but, the drainage becoming troublesome, the work has been discontinued until a suitable engine and pumping-plant be procured which will keep the mine dry, and wind the coal up on an inclined plane from a considerable depth. The water now stands at the level of the present floor, which is in some cases a bog in

wet weather. The floor of the present opencast is now below the level of the old tail-race drain, into which the drainage at times is lifted by a hand-pump.

47. *Dunsmuir's Black Stone Hill Pit.*—A fair amount of coal for this quiet place is still going out of the pit. The thickness of the seam is about 10ft., and the stripping is from 5ft. to 6ft. The pit is in good order.

48. *Beck and McLean's Pit.*—The best of the coal is now in the east end of the pit, in the direction of Mrs. Andrews' pit, which is only a short distance away. The stripping is hard gravel, and about 7ft. deep. The coal is about 30ft. thick, with a band in the centre. The face of coal and stripping is in good order. The drainage is lifted by a horse-whip.

49. *Mrs. Andrew's Idaburn Pit, Idaburn.*—The open paddock and the walls all round are in splendid order. The stripping just now is 7ft., and the thickness of coal removed is about 20ft., but it is not taken out to the floor of the seam, in consequence of its dipping away from the level on which the pump was fixed some time ago. The pump-well and the drain toward the east end of the paddock will have to be deepened in order to follow the floor of the seam any further.

50. *Turnbull's Border Colliery, Idaburn.*—This is an opencast, having from 10ft. to 12ft. of coal, and only from 1ft. to 6ft. of stripping. The coal may be thicker than shown in the face, but is being hewn out to the level of the pump-well. The drainage is pumped out by a Douglas pump, driven by a water-wheel 4ft. in diameter and half a head of water.

51. *Dougherty's Gimmerburn Pit, Gimmerburn.*—This was J. Knight's old pit. The stripping is from 5ft. to 6ft., and the thickness of coal removed is about 12ft. The working-face is safe and fairly well kept. A hand-pump is used to keep the pit dry. It requires a half-day's pumping every thirty-six hours to keep the water below floor-level.

52. *Archer's Commercial Pit, Kyeburn.*—Mr. Archer worked the seam in the flat to the level of the water in the Kyeburn Stream, and then discontinued the work for awhile. He is again back to the old pit in the terrace, and has lately driven a dip-tunnel in the seam from the face of the terrace, following the coal—which is nearly vertical—for some distance below the old workings, thus leaving a rib of coal overhead to prevent the walls coming together. The coal is not so thick as it was at a higher level, but it may improve as the work advances. There are only two working-places, and they are in good order. The output at this time of the year is not great.

53. *Combes and McCready's Pit, Kyeburn.*—This mine was not being worked at the time of my visit, and Mr. Combes was then from home. I did not go into the pit. Very little coal is being taken out lately.

54. *Griffith's Waikerikeri Pit, Clyde.*—During the past year a new shaft was sunk close to Marie's boundary, but very little mining was done. The shaft is now closed, and may remain so for some time. This is Holt's old pit.

55. *Marie's Dairy Creek Pit, Clyde.*—G. Griffiths, who was lately in charge of the Waikerikeri pit, is now assisting J. C. Marie to put his mine in working order, and with a view of getting out coal with him. The upcast shaft was being fixed up, and the incline tunnel had already been put in working order. An air-fan has been built and placed at the mouth of the tunnel ready for work. I went down the tunnel nearly as far as the old workings, where the air had rather an unpleasant odour—an old fire smell. I think there is still fire in some of the old workings in Marie's or Holt's mine. Now that Griffiths has arranged to work in the mine with Marie, I have asked the Commissioner of Crown Lands to stay any action in the matter of cancellation of the lease, which, I understand, was ordered to be done.

56. *Kawarau Mine, Bannockburn.*—(24/11/94): I found the dip-drive had not been extended since my previous visit. The principal workings now in hand are on the south side of the mine, where the coal is good, and of a uniform thickness of 8ft. The headings run parallel, and generally follow the contour of the floor. Openings from one to the other are made at convenient distances to keep the mine well ventilated. There is no work being done in the top seam, but the air passes from the lower through the upper workings, thus keeping both levels clear. The output of coal at this time of the year is not great, and therefore the miners do not put in full time. The drainage is very light.

57. *Goodger and Anderson's Pit.*—(24/11/94): This pit was lately owned by Ridland. The tunnel constructed by him has caved in, and that part of the mine has been abandoned. A new dip-drive has, since my previous visit, been put down to the coal on the east of the Bannockburn Stream. The coal is from 5ft. to 10ft. thick, and dips to the north. From the bottom of the incline the thin part of the seam has been worked out to the outcrop to within 30ft. of the surface, and pillars now only remain. The 10ft. part of the seam is downward from the bottom of the dip-drive, where the drainage is rather too heavy for one horse to hoist it in addition to the coal. The water is said to be 4,000 gallons in the twenty-four hours. To follow the seam down will be a little more costly per ton than it has been.

58. *McNulty's Mine, Bannockburn.*—(24/11/94): I did not find any one at the old pit-mouth, which appears to be closed. A new dip-drive is now being put down at a steeper angle to the coal, and is already driven about 54ft. in sandy clay. There are several light sets of timber fixed in position near the surface, and the balance of the drive appears to be dry and hard. A little coal is being got in another place near the outcrop, to keep the customers going till the new dip-tunnel is completed to the coal.

59. *O'Brien's Pit, Nevis.*—(30/11/94): It is only quite lately I was made aware of the fact that a coal-mine has been working for some years near the Nevis Township. I therefore visited the spot, but did not find any one there. The seam is very large and stands nearly vertical. It is opened where it crosses a small gully near the river, and a few feet of surface at the outcrop is stripped off by a body of water conveyed to the spot in a race, the gully acting as an outlet-drain and tail-race to carry away the *débris* to the river. This mine will be included in my list showing the output for 1894.

OTAGO SOUTH.

60. *Wallsend Mine, Lovel's Flat.*—(25/7/94): This is a deep open face of coal with from 8ft. to 10ft. of clay stripping. Quite lately a band of stone and rubbish has made its appearance in the face of coal, about 9ft. down from the top of the seam, which has very much added to the labour in getting out clean coal. This band is several feet thick, and has to be carted away to make room at the working-face. The slope of the stripping and the coal face is in a safe condition.

61. *Elliott Hill Mine, Lovel's Flat.*—(25/7/94): Went through all the workings and found them in good order. There are now three men employed in the mine, and doing some preparatory work with a view of boring for a better class of coal, which Mr. McDougall thinks exists at a much lower level. He started to sink a fair-sized shaft, but, after getting to a depth of about 20ft., found the quantity of water too much to lift by hand appliances.

62. *Benhar Mine, Benhar.*—(24/7/94): A main heading has lately been driven 1½ chains from the old workings into the new lease, on the south-west side of Nelson's property, where there is a decided improvement in the coal in making a good roof. The height of coal being taken out is about 10ft. only, out of a thickness of about 30ft. The extent of new lease is 4 acres. The air in the mine is much better than it was at the time of my previous visit. A new air-shaft is being sunk in the new lease, and is down to a depth of 30ft., leaving about 90ft. to sink to the coal. It is expected to be completed within two months. All the small coal is used at the pottery and brick-works on the ground.

63. *Rigfoot Mine, Benhar.*—(24/7/94)): A main level is being driven from the old workings to the south-east, with the view of making an opening to the surface near the railway-siding at Nelson's pottery-shed, where the coal-seam is estimated to be about 60ft. from the surface. An incline plane will be made to the seam, and the coal hoisted to a platform above the level of the railway-trucks. The height of coal now being taken out in the main level is 6½ft., and from 12ft. to 13ft. wide. The coal roof is good, and many feet thick. All the small coal is used in burning bricks at the pit-mouth. The drainage in the mine is not heavy, and the windmill does the pumping very well.

64. *Kaitangata Mine, Kaitangata.*—(20/7/94): Went down the shaft to the 600ft. level, where a drive is driven 190ft. south-east to what is called the main seam, standing at an angle of 47°. The distance from the shaft to the coal, in a straight line, is about 120ft. The thickness of coal here is about 30ft., but south of this a short distance it widens out to nearly 40ft., and then further on it comes in again to about 3Cft.; still further south it thins again, and splits up into several seams at a distance of 650ft. from the shaft-tunnel. Beyond this it is not being followed at present. On the same level the seam is being followed to the north, and has been driven along a distance of 1,100ft., where the coal is 15ft. thick, and is still being followed with a fair-sized drive by keeping the foot-wall in sight. From this level, 500ft. on the north side of the shaft, an uprise-tunnel of 1 in 2 has been driven 420ft., where it joins the dip-drive from the incline workings. All this is through solid coal of first-class quality. All the coal hewn in this section of the mine, below the level of the bottom of the incline plane, will be lowered to the shaft, and this will be called the main outlet from this section of the mine. It will also act as the main airway for that part of the mine. From the bottom of the incline plane I followed the level stone drive to where the pillars were being removed back to this drive. The roof was being allowed to settle behind the men, and it was doing so with perfect safety to the workmen.

65. *Castle Hill, Kaitangata.*—(21/7/94): The dip-drive or engine-plane from the surface to the coal is now completed, and a roomy arched brick chamber has been built in the coal seam. From the chamber the coal has been followed southward about 666ft. to date, following the contour of the floor, and keeping roof-strata on the right-hand side in sight all the way. The floor-coal is for the present very troublesome by continually rising throughout the length of the main level, from a few inches to as much as 2ft., which frequently backs the drainage into the working-face; consequently, the rails have to be lifted at short intervals, and the floor dressed down to an even gradient to allow the water to flow to the pump. There are cross-headings put up the seam at every 15 yards. Two of these nearest the engine-plane have reached a downthrow fault at 74 and 77 yards, where the coal is completly cut off, similar to the downthrow faults in the Kaitangata Mine. It is the intention of the manager to at once put in a stone drive on a level from the top of the fault a distance of about 200ft. in a south-east direction, and then sink to the coal, which, when reached, will be a guide in laying out future mining work from the main level in that direction. I think this fault will be found to extend from the south to the north boundary of the company's property. From the chamber a main-level tunnel is being driven north and following the contour of the floor, as was done on the south side. At the time of my visit the tunnel was driven 390ft., where the coal seam had thinned down to 4ft. and 5ft., but of very good quality—probably the best in the mine. This level is to be continued north to the company's boundary if the seam does not get much thinner than it is now, with a view of testing the value of the seam in that direction. Cross-cuts are also to be put in at intervals, heading westward, to see if any other seam exists above the one now opened, which was indicated in the engine-plane when being put down. The big pump is now fixed in position in a large arched brick—four-brick-thick—chamber specially constructed for it. The pulleys to guide the wire rope to the scooping-drum are now being fixed in position, and all the pumping plant is expected to be ready for work in about three weeks from date. Gas is very noticeable in the south and north main headings, but only at the extreme end, where the air-current does not get at it very well. Brattice-cloth is fixed to within 4ft. or so of the working-face. A conspicuous notice is placed in the main level on both sides of the chamber, "Not to take open lights beyond this place." The prospecting-shaft sunk some years ago is now being enlarged for an air-shaft to 9ft., and bricked one brick thick as the enlargement goes on. This work is now completed to a depth of 230ft., which leaves 300ft. yet to be done. The south main heading from the engine-plane will shortly be abreast of and only a short distance on the dip side of the air-shaft. The manager thinks this airway will

be in use about four months from date. The shaking-screens separating the coal into four sizes are now in full swing, and are being driven by a small steam-engine of 10-horse power fixed on the screen-frames. The coal goes direct into the railway-trucks. The sidings are all completed, and are capable of holding fifty-eight full and the same number of empty trucks. The weighbridge is to be immediately fixed in position, a short distance from the coal-screens.

66. *Mainholm Mine, Conical Hills.*—(19/12/94): The working-face is nearly 4 chains wide, advancing with a straight face northward. At the western end of the opencut there are 16ft. of clean coal, hewn down to the floor, and at the eastern end 22ft. of coal is removed without touching the floor. A greater depth cannot be conveniently reached at present in consequence of some defect in the pumping plant, which I am told is to be remedied at an early date, in order to get to the floor of the coal. The stripping, which is kept well in advance of the coal face, is 9½ft. at the western end and 5ft. at the eastern end of the face. The clay is being utilised in brick and pipe-making on the spot, and the burning of these things uses up all the small coal in the pit. Since my previous visit a more powerful engine has been fixed to the pumps and clay-puddling machine. It is intended also to do the winding from the pit to the railway-trucks, which are close by.

SOUTHLAND.

67. *Valley Road Mine, Pukerau.*—(22/8/94): This pit was being opened at the time of my previous visit last year. Since then a considerable opening has been made—probably a chain long by 20ft. wide—to the floor of the seam, which is fully 20ft. thick. The average depth of stripping along the face is about 5ft., and is likely to get deeper as the seam is followed into the rising ground on the south side of the pit. The drainage is heavy, and is at present being pumped out by a small windmill, but the uncertainty of this motive-power doing its work when required, especially where there is no storage-room for water, renders it almost useless. As a subsidiary power it may at times prove useful, but if a steam-engine is not procured to do the work much valuable time will be lost, and at times cause disappointment to the customers.

68. *O'Hagan's Mine, Pukerau.*—(22/8/4): All the working-places are well laid out, and are in splendid order. The dip—although slight—of the seam, being into the hill from the mouth of the adit, is now rather inconvenient for getting rid of the drainage. Some years ago a main drain was made into the mine, along the adit-level, and several branches therefrom were cut into the working-places, going to the dip. These have been extended from time to time till their gradient ran them out to the level of the floor; since then hand-pumps are used to lift the water to the drain, and now these pumps have to lift the water from 3ft. to 5ft. Fortunately the quantity of water is not great. Large trunks of trees and numerous very large stumps are as plentiful in the mine as ever. The grain and quality of some of the wood appears to be little altered, notwithstanding its having lain there for very many thousands of years. A portion of the very large stumps is generally found to be turned to stone. The thickness of lignite is 16ft., of which from 8ft. to 10ft. are being taken out. There are some large, open, vertical cracks met with in places, through which water and clay have come in quantities at times. These places are generally blocked up with timber, and then shored up from the floor where otherwise considered unsafe.

69. *Dudley's Mine, Pukerau.*—(22/8/94): The last work done is stripping close to and alongside of the tunnel driven in the coal some two years ago. The stripping is from 10ft. to 12ft. deep, all clay, and fairly well sloped. The depth of lignite is 16ft., and is a continuation of the seam in O'Hagan's lease. The long and deep drain to the working-face has been at last completed at a considerable cost of labour. It follows the open gully some distance, and is then put through old stripping material tipped into the gully from previous workings, earthenware pipes were then laid down, and the opening filled up. The head of the drain is 3ft. below the floor of the coal where the stripping is now being done. This will drain a considerable area of ground on the south side of the gully, including a part of Dudley's lease.

70. *White Rigg Mine, Gore.*—(24/8/94): This pit is now being worked by Telford and Porter. The stripping is nearly all fine gravel, not more than 5ft. deep, and easily removed. The coal is 16ft. thick, dipping west into the low-lying flat of the Mataura. The drainage is pumped out by horse-power.

71. *Heffernan's Pit, Gore.*—(24/8/94): I notice very little alteration in this pit since my previous visit last year. The stripping is from 5ft. to 6ft. of clay and fine gravel, well sloped back from the coal, which varies from 15ft. to 20ft. thick. It thickens to the dip going west, and an open drain keeps the pit dry.

72. *Johnston's Pit, Gore.*—(24/8/94): This is a shallow open-cast on the coal reserve, about three miles east of Gore. The stripping is from 2ft. to 4ft., and the thickness of coal varies from 2ft. to 10ft. The drainage has to be lifted by a hand-pump about 8ft.

73. *Sarginson's Pit, Gore.*—(8/10/94): The coal taken from this pit is for house use only. I found the pit in a safe condition; the sides being well sloped.

74. *Hoffman's Pit, Gore.*—(24/8/94): A new pit was being opened at the time of my visit last year. The opening made since then is at present partly filled with water, and apparently abandoned, but fresh preparations are being made a short distance to the northward to open a new place, where some stripping has already been done at the coal outcrop, and an open drain, several chains in length, is being made to the spot. I did not see any one about the place.

75. *Regefskie's Pit, Gore.*—(24/8/94): Only the outcrop is being followed close to the ploughed surface. The seam to the dip (north) is not being followed beyond where the stripping reaches a depth of 4ft. The thickness of coal is only 3ft. and 4ft., and is being hewn for house use only.

76. *Klukoskie's Pit, Gore.*—(24/8/94): This pit is in a ploughed field where the outcrop of coal is within 4ft. of the surface. The seam is 4ft. thick, and dips slightly to the north. The owner states that he takes out coal for his own use only.

77. *Green Pit, Gore (worked by Stark and Son).*—(20/8/94): The output from this mine during the first six months of this year is so much greater than during any previous half-year as to lead to the belief that it is likely to very much exceed last year's output. The quantity and quality is still there, and plenty of room for men to put out any quantity if there was a ready sale for it. The bords are made from 15ft. to 18ft. wide, and the coal to a height of from 12ft. to 15ft. is taken out, which leaves from 4ft. to 5ft. overhead for a roof. The thickness of coal overhead is tested from time to time by boring through it with an augur as the working-places advance. The dip of the coal is probably 1 in 5, but the seam is not at present being followed to the dip. The present workings are following the contour of the floor near the outcrop, being, I suppose, the least costly coal to get for a while. When the dip is followed straight down for some distance, which will have to be done at an early date, steam-power will have to be used to do the haulage from the dip-bottom to the main dray road. The coal-boxes are at present being hauled from the workings to the dray road, a distance of 4 chains or more, on a gradient of about 1 in 3, which requires a strong horse to haul one box at a time. There is some talk of this mine being opened in another place a short distance to the south of the present pit mouth, and in the direction of the dip of the seam where there is a considerable depression in the surface, in the belief that the coal is quite handy to the surface. I advised them to first take some levels, and calculate the dip of the seam, to avoid a disappointment.

78. *J. Smith's Mine, East Gore.*—(20/8/94): Fair progress has been made in the underground workings since my previous visit, and the young man in charge is doing his work very well. The workings are from 12ft. to 15ft. wide, and the pillars 14ft. thick. Of the 21ft. of coal, only about 12ft. is taken out, leaving an arched roof of 9ft. of coal. An upcast air-shaft is very much required to carry away the powder-smoke quickly, and this necessary work, I am promised, shall be done at an early date. A small portion of the drainage of the mine is lifted by a hand-pump into a covered drain in the pit, and leads to the surface in the hillside. The seam dips slightly to the south.

79. *R. Smith's Pit, East Gore.*—(20/8/94): This is still an open face in the side of the hill near J. Smith's pit. The stripping is getting deeper as the work advances into the hill, and is caving into the opening very much. The output is as yet very small.

80. *Irvine Brothers' Pit, Knapdale.*—(24/8/94): Since my previous visit the seam—nearly vertical—has been followed northward to where the character of the coal is very much altered for the worse, being, in fact, crushed up into slack, and showing clay where there should be coal. When the clay was touched in the face near the roof further work in that direction was stopped for the time being till a bench in the working-place is hewn down to the floor level, and perpendicular with the spot where the clay was touched in the face. A bench of 6ft. is to be taken off the floor of the mine, while a small prospecting tunnel is being put into the face to ascertain what is ahead—probably a fault. The present chamber is as large as it can in safety be worked in without timber or filling in with *débris*.

81. *Pemble's Pit, Chatton.*—(29/8/94): Harvey's drain to the south end of the open cut is still in progress, and should be completed during this coming summer. Clay pipes are being layed in the cutting as the works go on, and the deep part will be filled in again after the pipes are laid. The main seam of coal is still in a vertical position, but what appears to be a second seam is making on the east side of the present workings, and dipping eastward at an angle of about 1 in 2. The quality of this seam, however, where exposed is very friable and unsaleable. I think if it continues into the hill it should improve in quality.

82. *Hunter's Pit, Chatton.*—(29/8/94): This pit is completely filled up by a large land slip from the terrace on the line of the seam, which is vertical, and is a continuation of Pemble's coal. I no not think Hunter is likely to clear away the slip. I fear it is too big a job for him.

83. *Pacey's Pit, East Chatton.*—(29/8/94): I found the pit—now 3 chains long by about 40ft. wide—filled with water to the level of the outlet drain, which is near the level of the top of the coal. It would take the engine four days to pump the water out. The stripping is 10ft., and the face of coal is 14ft. The road to the pit is in such a bad state of repair just now that there is no sale for coal.

84. *J. McGill's Pit, Wendon.*—(27/8/94): I heard of this pit to-day for the first time, and that coal had been taken out of it for his (McGill's) own use only for some years past. Mr. McGill has quite lately started to sell coal to his neighbours, and is therefore preparing to open the pit properly, so as to have always coal hewn ready for a customer when he comes. Preparations are being made to fix up a small water-wheel to do the pumping, which work will have to be done shortly, since the seam dips into the terrace. The quality of the coal is said to be very good. The stripping will average 5ft., and the coal-seam 14ft.

85. *Roland McDonald's Pit, Wendon.*—(27/8/94): Very little has been done in the pit since I visited it last year. The working-face has been cleaned-up a little, and more room made. The new road to the pit is now completed, and has been well laid out. The coal is about 10ft. thick, and the stripping about the same. There is very little coal removed in the year.

86. *G. H. Evans's Pit, Wendon.*—(27/8/94): The stripping is getting deeper every year, and will continue to do so as the work advances into the terrace; it is now about 25ft. deep, with about 15ft. of coal—in all, 40ft. of a face—which is in first-class order. Mr. Evans does not like the idea of tunnelling the coal out, and declines to give it a trial, as he does not understand underground work.

87. *W. H. Edge's Pit, Waikaka.*—(28/8/94): I found this pit much in the same state as it was in last year. I did not find any one there. No coal, I am told, has been taken out this year.

88. *David Williams's Pit, Granville Road.*—(28/8/94): This pit is on the farm joining Milne's, and is being opened in a narrow gully where the terrace is high on each side. The stripping from 6ft. to 12ft. has laid bare the top of the coal, but its thickness is not known beyond the depth of

6ft. now excavated. A drain, 5 chains or more, has been made up the gully to the pit, but it does not appear to be nearly deep enough to be any good. I think the stripping on either side of the gully will be very heavy. This pit is also being opened to supply the farmers who have purchased on Logan's Estate.

89. *John Milne's Pit, Granville Road.*—(28/8/94): A proper opening is now being made in a small gully to get out coal for sale, where for some time past the owner got from a small opening what was necessary for his own use only. The stripping just now is not more than 3ft., but, if the coal be followed into the terrace on either side of the low flat, the depth of stripping will run into from 10ft. to 18ft. The coal is said to be about 8ft. thick in one place where tested. Mr. G. W. McDonald, the lessee, and another were cutting up a drain at the time of my visit, with a view of draining the seam to the floor, if possible, at the lowest place tested. The drain starts from and on the west side of the Granville Road. Its estimated length, when completed to the pit, is 20 chains, and the depth at the top end 12ft. The top half of the drain will be piped and filled in. The estimated cost is £35. The pit is being opened in anticipation of disposing of coal to those who purchased farms quite lately on Logan's Estate, which is on the east side of the Granville Road, through to Kelso.

90. *Thomas Middlemis's Pit, Granville Road.*—(28/8/94): This pit is situated in an out-of-the-way place, where the coal is hewn out for house use only. The pit (an open-cast) was full of water at the time of my visit. The year's supply for the house is hewn out in summer time, when there is very little water to bail out of the pit. I think the stripping is shallow, and the seam probably very thin.

91. *J. Smith's Waimea Pit, Waimea.*—(29/10/94): The old workings were abandoned nearly twelve months ago, and a new pit was opened, distant about half a mile south-west of the old pit The advantages of the new workings are in every way superior to the old. The seam is 10ft. thick, with stripping from 4ft. to 10ft. on the face of the terrace. It will take some years to remove the coal on the face of the terrace, where the average stripping will not exceed the figures quoted, after which time a 7ft. tunnel will probably be driven into the face of coal, leaving 3ft. of coal overhead for a roof. The floor of the seam appears to be very level, and a good drain has been made up to it. A dray road is now being formed to the public thoroughfare, distant nearly half a mile. Other preparations are being made for a large output of coal.

92. *Maslin's Pit, Wendon.*—(30/10/94): The open cut which was being made into the western seam of the two at the time of my previous visit last year caved in shortly after, and has not since been touched. Since then the output of coal has come from the floor of the tunnel in the eastern seam, which is supposed to be 22ft. thick, and, like the other, stands nearly vertical. About 12ft. of the centre of this seam by about 10ft. or 12ft. in height, is being taken out to the level of a small gully, which crosses it at right angles. Some stripping is being done on the same seam in another gully to the south, where the coal will have to be removed before the winter sets in, else it will be covered and lost with landslips. The road to the pit is at this time of the year in good order.

93. *E. Vial's Pit, Waikaia.*—(31/8/94): In the old stripped gravel-face of from 50ft. to 60ft. high a short tunnel, branching into two, has been driven about 25ft. in the coal, which dips into the terrace; this tunnel is now abandoned. The work done is very unworkmanlike at the start, and it is perhaps well that it is not to be continued. A fresh start is being made in the face of the terrace a little further south, where there is 18ft. of coal at a lower level. In order to work to the floor of the seam here pumping has to be done, and the water lifted 13ft. at the start, with the dip of the seam to be added as the work proceeds under the terrace. To do this work a small 6ft. overshot water-wheel is being fixed at the spot to work a 4in. x 4in. vertical wooden pump, which is already fixed in position. On top of, and resting in the coal, there is 2ft. of a hard silicious band likely to make a good roof if the working-places are not made too wide. There is very little coal hewn in the winter time.

94. *McIvor's Pit, Waikaia.*—(31/8/94): McIvor has shifted a little to the north of where he was working at the time of my previous visit, where the stripping just now is not more than 25ft. to the coal. A paddock was sluiced off at the time of my visit, exposing the top of the coal in patches only, indicating that deep trenches had been cut into the coal by the river and gravel at some remote period of time. All the stripping is passed through sluice-boxes to save the gold it contains. The thickness of coal at this spot is not yet known, but it is thought to be thin on account of the scour it has been subjected to when it was the floor of a large river.

95. *Northcotes Pit, Waikaia.*—(31/8/94): The coal here—9½ft. thick—is being tunnelled out, leaving about 4ft. of coal for a roof. At 9½ft. from the floor there is a splendid smooth parting as far as the seam has been followed under the terrace, and likely to continue over acres of ground, but it is very clear to me that the young men working the mine know but little about underground coal-mining. I have stopped coal-hewing in one working-place in order to keep the mine open at the face of the terrace. I have pointed out where coal-hewing is not to be done near the perpendicular face.

96. *J. P. Hill's Pit, Waikaia.*—(31/8/94): The pit (an open-cast) was fitted with water at the time of my visit, and two men were breaking up a fall from a 126ft. face of gravel and clay stripping preparatory to sluicing operations. When asked why they did such heavy stripping, when the coal could be so much more easily got by tunnelling it out, they replied that, by sluicing the gravel off, they got nearly enough gold to pay for the work, and that the gold was confined to an 8ft. band in the gravel. They say they use twelve heads of water when sluicing. There is 20ft. of good coal, but at a level, I think, below the river, which is close by. A 7ft. overshot water-wheel does the pumping when coal is being taken out. The coal-hewing, however, is done, I think, in the summer time, when the drainage is not heavy.

97. *Sleeman's Pit, Mataura.*—(25/8/94): This pit is being worked in a very systematic manner. The stripping is a clean-washed fine gravel from 15ft. to 20ft. up, and is kept at a good

angle or slope, well in advance of the coal-face, which shows from 17ft. to 18ft. of clean coal. The drainage through the gravel is very heavy, and requires two 8in. and two 6in. pumps constantly going to keep the water down. The quantity of water pumped is said to be 6,000 gallons per hour, and a small water-wheel does the work. It is intended at an early date to try tunnelling the coal out, and leave a strong coal-roof.

98. *Beattie and Coster's Pit, Mataura.*—(25/8/94): At the time of my visit last year preparations were being made to open an old filled-in pit close to Sleeman's workings. Instead of clearing-out the old worked-out ground, fresh ground was broken close to the old coal-face, leaving a wall of coal a few feet thick to keep the water and mud out of the new pit. In the new opening the floor of the coal has been reached, showing from 10ft. to 15ft. of coal, with 11ft. of fine gravel-stripping, which is good moving stuff. A small portable engine generates the steam to work a pulseometer pump, which keeps the pit dry very easily.

99. *C. Town's Pit, Mataura.*—(25/8/94): The drainage into the pit was so much greater during the last week than the pumps could cope with that the large open pit was filled with water to nearly the level of the top of the coal, and was at the time of my visit still rising. I learned from Mr. Town that this flooding-out is now a frequent occurrence after heavy rains. The drainage through the clean-washed gravel of the Mataura Flat is very heavy, and requires larger pumps and a more powerful motive-power than the present water-wheel to do the work. The value of the time lost, and the trade lost every year, would soon pay for a small steam-engine and plant that would keep the mine workable all the year round at a very little cost. The water-wheel could still be used to pump all night.

100. *McGowan's Pit, Mataura.*—(19/10/94): This old pit is not being worked beyond a barrow load once in a while during the year. I did not find any one there.

101. *Townshend's Pit, Mataura.*—(19/10/94): Very little work has been done since my visit last year. The pit (open-cast) is very much filled with clay from the sides and face, where it is from 8ft. to 10ft. thick on top of the coal. It is gradually getting deeper as the coal is followed into the terrace. There is, no doubt, a large amount of labour being expended and lost in proportion to the quantity of coal procured by stripping, that could be saved by mining the coal out. I have advised Mr. Townshend to clean out a part of the open-cast to the coal-face, and start a tunnel in the coal, which is said to be 18ft. thick. I have never seen the floor of the seam, but am told it dips to the north, which is not in its favour for working. The coal is hewn for his own use only.

102. *J. C. Mutche's Pit, Mataura.*—(19/10/94): This pit is very shallow and easily worked, coal for his own use only is being hewn.

103. *Hugh Smith's Pit, Mataura.*—(19/10/94): Mr. Smith has lately left this locality, since then nothing has been done in the pit. It is in an out-of-the-way sort of place to go for coal.

104. *McNicol's Pit, River View, Mataura.*—(19/10/94): The working-face is now more in the bed of the gully than it was last year, and the stripping is less than 2ft. The coal is about 10ft. thick with vertical tracks at short intervals, which make it easy work to remove the coal. A few chains of road leading into the pit shows unmistakable signs of being very bad in the winter. The coal is being hewn for homestead use only.

105. *Genge's Pit, Wyndham.*—(13/10/94): The stripping is about 5ft., and the depth of the coal-seam is only from 1ft. to 2ft., which pinches out to nothing in the terrace on the south side of the pit. The coal has, no doubt, been scoured away by the river at some remote period of time.

106. *McDonald's Pit, Wyndham.*—(15/10/94): This pit has now a large open face from the low flat to the terrace, and then along the face of the terrace, where the coal is now being hewn. The stripping is fine gravel, and from 5ft. to 7ft. deep. The coal hewn out is from 5ft. to 6ft. thick.

107. *Shield's Pit, Wyndham.*—(15/10/94): These workings are now well into the terrace, where a considerable hole has been made since my visit last year. The stripping is fine gravel and surface clay, in all from 5ft. to 6ft. deep. The thickness of coal is from 6ft. to 10ft. The drainage has to be lifted 10ft. by a hand-pump. I was shown at the pit a splendid sample of fine gold obtained from the fine gravel packed in the crevices of the top coal, and was informed by the coal-hewer that a little fine gold could be got anywhere on top of the coals in any of the pits in the low-lying flats of the Mataura.

108. *H. Marshall's Pit, Wyndham.*—(15/10/94): This pit is on the low-lying flat, where the stripping is very shallow, and the excavation is all the time filled with water till bailed out when a load of coal is required for his own use.

109. *Munro's Pit, Wyndham.*—(13/10/94): There is nothing new to note here. The clay stripping is from 6ft. to 8ft., and 4ft. of coal. The drainage has to be lifted 5ft. by hand. The pit is subject to inundation from the Mataura River in time of ordinary floods.

110. *Hokonui Pit, Winton; J. Hayes, Manager.*—(12/10/94): The engine-plane is down on the line of dip 7 or 8 chains, carrying an even floor and a full thickness of the coal-seam all the way. From this headings are put in on each side, and the contour of the floor followed to the south-east several chains—nearly to the boundary—and to the north-west 10 chains or more. In this distance the thickness of good clean coal is very even at 6ft., leaving from 1ft. to 2ft. of poor quality for a roof. In some places in the mine the roof-parting is very smooth and stands well. In other places it gets rather rough, and has to be supported with timber to keep it safe. I did not, however, see any place where the roof had caved into the workings. There are in all some twenty working-places in the mine, and all in good order. The drainage is about the same as last year. The air is good throughout the mine. At about 20 chains west from the top of the engine-plane a bore is being put down to test the seam there with a view to sinking a shaft a few chains further west at an early date. The bore is now down 300ft., which is calculated to be within 50ft. of the coal. The strata bored through is compact laminated mud and fine layers of sand.

111. *P. S. Graham and Todd's Pit, Fairfax.*—(27/10/94): The roof in this mine is the best in Southland, and the timber in the mine is well and neatly fitted. The seam keeps a remarkably even floor and roof, and rises a little to the eastward, in which direction the coal is being followed from the start of the tunnels, which are now some distance in under the terrace. Brattice is now used to carry the air to the working-places, and I found the air-current very good.

112. *M. Slattery's Pit, Fairfax.*—(27/10/94): The seam of coal keeps very even on top and floor. The stripping is well in advance of the face of coal, and continues much the same in depth as last year—namely, from 12ft. to 15ft.

113. *Robert Salton's Pit, Fairfax.*—(27/10/94): This is an old pit, abandoned years ago, and recently opened again by Salton. A tunnel has been driven 1½ chains in from the open face in 5ft. of coal all the way. A very narrow drive is being continued to get beyond the old workings which are said to exist. The new work is in a safe condition, and the air is good.

114. *Nightcaps Coal Company's Mine.*—(24/10/94): Half of the coal now coming out of the mine is being hewn on the east side of the old workings, at a spot which was being laid bare at the time of my previous visit last year. The face of coal in this part of the mine is bottom seam, from 5ft. to 8ft. thick, with from 3ft. to 5ft. of a shaley band on top, and then 17ft. of top coal. It must be the same seam as that worked on the west side of the company's property two years ago. The seam is proved to be nearly flat, going north-east with a main heading, now some distance in. Other preparatory work is going on in this part of the mine. The air is good throughout the workings, and all the working-places are in good order.

115. *William Reid's Pit, Nightcaps.*—(24/10/94): The little engine and pumps have been shifted about 3 chains to the south of its first position, in which direction the coal is being followed. The stripping on the west side of the pit is about 3ft., and on the south side as much as 15ft. of hard-packed waterworn gravel. The thickness of the seam is 13ft. of clean coal of the same quality as Nightcaps.

116. *Reid's No. 2 Pit.*—This pit is situated in the Nightcaps Coal Reserve. The outcrop has been followed from a small gully, and a hill tunnelled a short distance, but is found to be only about 4ft. thick. Very little work has been done yet. The seam is considered too thin to pay at present prices. Further prospecting is to be done at an early date.

117. *N. G. Chalmers, Mount Linton Pit.*—(25/10/94): This pit is being worked for the station use only. There is 8ft. of hard gravel-stripping down to the level of the creek-water close by, and then 5ft. of coal taken out, which is a convenient depth to bail the drainage out with a bucket. The thickness of seam is not known. The quality of coal is remarkably good.

118. *Cassel's Pit, Orepuki.*—(22/10/94): Very little work has been done in this mine since my visit last year. The water was up in the lower workings so much as to prevent inspection; but the manager pointed out to me the top workings where all the coal had lately been hewn from. These working-places are in good order. The engine was pumping at the time of my visit.

Some Pits not on the List.

Alley's Pit, Nightcaps.—(24/10/94): This pit is in the Nightcaps Reserve, close to Reid's No. 2 pit, but on the low-lying flat where the stripping is 5ft. only. The thickness of coal varies very much in a very short distance, and is from 2ft. to 12ft. The patch of coal is less than 2 chains wide, thinning out to nothing on the east and west sides. The quality is said to be very good. The output from this pit is reported to me by Mr. Handyside to be added to the output of his company.

Coal Point, Mouth of Clutha River.—I visited the sea-beach at low tide in order to get a good view of the seam of coal, the surface of which stands above high-water mark in the terrace, and the floor extends level with the sandy beach into the ocean. There is evidence of a large quantity of coal having been carted away from above and below high-water mark from time to time when the tide suits. A farmer in the locality informed me that hundreds of tons had lately been removed by farmers and carters, who convey it as far as Balclutha. There is no means of ascertaining the quantity of coal removed annually. There is, however, no doubt about the sea incroaching on the land—valuable land—as fast as the coal above high-water mark is removed. This should be stopped.

Fraser's Property, Kaitangata.—(23/7/94): This is a new mine, and a seam of coal, 6ft. thick, is being opened at the head of a small gully, where the outcrop is visible in several places, and dips very quickly north-east about 1 in 2. Similar coal is found in nearly all the gullies for some distance round on the north and east sides of the pit mouth. In one of these gullies, probably half a mile eastward from the opening now being made, there is a large body of coal exposed, prob ably 18ft. or 20ft., but I could not see the dip of the seam. A light iron tram is being laid from the pit mouth to the Kaitangata–Lovel's Flat Road, a distance of one mile and a quarter, of which there are 60 chains completed. The junction with the road will be about a mile north-east from Kaitangata Railway-station, and a good level road to cart on.

The Matau Company, Kaitangata.—(23/7/94): A level tunnel a few feet above the river has been driven a distance of 1,100ft., which is supposed to be within 60ft. of the coal-seam they intend to work. One seam passed through was considered too small to pay for working. The distance driven is nearly altogether in hard conglomerate, which generally stands without timbering, There is, however, a considerable length timbered, and very well done.

L. Gard's Pit, Alexandra.—(23/11/94): As yet, the shaft only has been sunk to the floor of the coal. Its position is about 2½ chains from the Clutha River, and on the Alexandra side, a mile or more above the town. The shaft is in the old gold-workings, perhaps 20ft. below the original surface; and it is 30ft. deep to the top of the coal, which is said to be 21ft. thick. This shaft is 5ft. 10in. by 2ft. 10in., which is also too small to comply with the 42nd section of the Coal-mines Act. I was not informed of this shaft having been started till the time of this visit, and did not see Mr. Gard at this time. I found a portable engine, of 12-horse power, being placed in position at the shaft to do the pumping and winding, and heard that a new pump had been ordered to do the

work. The top of the coal-seam is said to be 12ft. below the surface of the standing water—river-level—and the covering is all loose clean river-gravel, through which the water percolates freely from the river. There will therefore be 12ft. of water in the coal all over the flat. The thickness of coal will, however, admit of a considerable body being left overhead for a roof, to keep it safe for working.

Later on, I again visited this pit, and found these working-places started 6ft. above the bottom of the seam. The headings are 6ft. high by about 10ft. wide. The coal is very close and hard hewing. The headings are in 25ft. one way and 30ft. in another, but not quite dry.

Miles travelled by me during the Year ending 1894.

Saddle horse, 700; buggy, 806; coach, 28; rail, 7,440; steam, 230; foot, 198: total, 9,402.

Serious Accidents in Southern Coalfields.

I have to report as follows on the several accidents which have occurred during the year ending the 31st December, 1894:—

1. *Gibston Mine* (12th February).—James Cowan got his arm broken. How or when not stated in communication received.

2. *Kaitangata Mine* (11th April).—Alexander Ramsay killed; was behind tub in dip-drive; one tub got unhitched, tail-rod not in its place at the time, tub ran over him. Death instantaneous. No one to blame.

3. *Kaitangata Mine* (5th May).—Archibald Crawford was on incline to James McCaughran's heading when a runaway tub came down and killed him. It is supposed he was in the act of taking a drink from a tap on the water-pipe by the side of the down line at the time.

4. *Shag Point Mine* (27th September).—John McDonald had a fall of roof on him, which the doctor did not think serious at the time. I have lately heard that McDonald's spine is seriously injured, and he will claim relief for some time.

5. *Homebush Mine* (21st November).—Sydney McKircher was killed by a fall of roof on his head while filling his box; no one to blame.

There were ten or twelve slight accidents reported and claims made on the Relief Fund. Some of their claims were not entertained, the applicants having failed to comply with the regulations.

Methods of Working.

Worked by shafts—		
Steam-power used	4	
Horse-power used	8	
	—	12
Worked by adit—		
Engine-plane	7	
Horse-plann	21	
Horse-power	16	
Hand-power	22	
	—	66
Open		69
		147

I have, &c.,

J. Gow,

Inspector of Mines.

The Under-Secretary, Mines Department, Wellington.

APPENDIX I.

Statistics of Workings in Coal-mines, 1894.

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 1894.			Approximate Total Output to 31st December, 1893.	Approximate Total Output to 31st December, 1894.	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.																										
													Tons.	Tons.	Tons.	Tons.	Tons.									
KAWAKAWA DISTRICT.																										
Kawakawa	Moody, T. P. ..	28	semi-bitum.	1	3′ to 9′	the whole	1 in 6	bord and pillar	..	..	330′ incline drive	incline	2,966	..	2,966	791,879	794,845	3	11	14	horse	..	..	..	natural	16/10/94
New Bay of Islands Coal Co.	Swinbanks, John	5 mos.	ditto	1	3′ to 9′	ditto	1in4to1in5	„	..	..	390′	„	2,078	..	2,078	..	2,078									
HIKURANGI DISTRICT.																										
West Bryans	Smith, Charles ..	6	„	1	6′ to 12′	6′ to 10′	1 in 9	„	1	6′ x 5′	520′	adit	6,659	..	6,659	6,555	13,214	2	9	11	horse	..	..	..	natural	20/10/94
Walton and Graham's ..	..	..	..	..	..	the whole	..	opencast	..	..	..	..	..	..	..	1,210	1,210	..	..	..	..	..	..	..	..	..
Hikurangi Coal Company ..	Moody, T. P. ..	10 mos.	semi-bitum.	1	7′ to 11′	7′ to 10′	1 in 6 to 1 in 12	bord and pillar	..	6′ x 6′	..	adit	11,801	..	11,801	..	11,801	3	21	24	horse	..	..	..	natural	20/10/94
WHANGAREI DISTRICT.																										
Kamo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	225,037	225,037	..	..	..	..	..	..	..	..	..
Kamo New	Redshaw, William	10 mos.	brown	1	6′	5′	variable	bord and pillar	1	4′8″x2′8″	28′	adit	2,972	..	2,972	..	2,972	1	5	6	horse	..	..	..	natural	22/10/94
Whauwhau	..	..	..	..	..	..	..	..	..	5′6″x4′1″ tunnel	120′	..	..	..	..	70,853	70,853	..	..	..	..	..	..	..	..	..
NGUNGURU DISTRICT.																										
Kiripaka	Wright, Edward S.	2	semi-bitum.	1	5′	the whole	..	bord and pillar	1	6′ x 6′	9 ch., 11ch.	adit	13,655	..	13,655	2,697	16,352	11	21	32	horse	..	..	..	natural	21/10/94
WAIKATO DISTRICT.																										
Waikato	Wallace, William	6	brown	1	10′	10′	variable	„	..	5′ x 5′, 6′ x 5′, 6′ 3″ x 6′	47′ 6″, 23′, 10ch.	adit	11,060	218	11,278	142,983	154,261	8	21	29	horse	..	..	..	natural	8/11/94
Taupiri Extended	Tuttley, William	8	„	1	21′ to 50′	7′ to 20′	irregular	„	2	10′diam.	180′ and 204′	adit	29,453	973	30,426	433,084	463,510	11	50	61	steam	13″ and 24″	7″ 5″	180′ 204′	fan	28/11/94
Taupiri Reserve	Harrison, Jonathan	8	„	1	18′ to 24′	10′ to 14′	1 in 4½	„	2	9′ x 6′	1,188′	engine-incline	13,877	..	13,877	91,920	105,797	11	31	42	steam	2′	5″	140′	exh'st steam	11/6/94
Ralph's Taupiri	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23,019	23,019	..	..	..	..	..	..	..	..	..
Miranda, Bridgewater ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20,668	20,668	..	..	..	..	..	..	..	..	..
Bombay	Long, George ..	1	brown	1	2′ to 5′ 6″	3′	1 in 8	tunnel	..	6′ x 6′	150′	adit	20	..	20	..	20	..	1	1	..	..	..	..	..	6/2/95
MOKAU DISTRICT.																										
Mokau	Lobb, Joseph ..	9	„	1	6′ to 8′	the whole	varies	bord and pillar	1	8′ x 8′	924′	adit	522	..	522	6,565	7,087		3	4	horse	..	..	..	furnace	..
Co-operative	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	940	940	..	..	..	..	..	..	..	..	..

COLLINGWOOD.																										
Pakawau, Collingwood	..	Caldwell, W.	..	1	bitum.	3	14″, 8″, 5″	all	1 in 4	driving	..	6′ x 5′	406′	adit	99	33	132	..	132	..	3	3	hand	..	..	..	natural	14/6/94
Wallsend, "	..	Walker, James	..	26	"	2	20″ each	"	N. 60° W.	longwall	..	..	..	"	1,753	288	2,041	44,066	46,107	4	11	15	"	..	..	..	"	16/6/94
Takaka, Takaka	..	..		2	brown	1	2′ 8″	"	1 in 10	driving	..	..	..	"	..	..	..	70	70	sto	pp	ed	..	..	..	..	"	18/6/94
Motupipi, "	..	..		3	"	2	2′ 2″ eac.	"	..	..	..	..	..	"	..	..	..	70	70	sto	pp	ed	..	..	..	..	"	18/6/94
WESTPORT.																										
Mokihinui	..	Alexander, T.	..	14	bitum.	1	30′	9′	14°	bord and pillar	..	9′ x 7′	20ch.	"	10,742	..	10,742	17,169	27,911	4	55	59	horse	..	..	..	furnace	10/11/94
Westport-Cardiff	..	Broome, G. H.	..	2	"	1	20′	7′	N. 20° E.	ditto	..	9′ x 7′	462′	"	4,500	..	4,500	500	5,000	10	30	40	engine	..	..	..	natural	12/11/94
Coalbrookdale	..	Green, John	..	14	"	2	4′ to 20′	all	variable	"	4	8′, 8′, 8′, 6′	48′, 146′, 90′, 148′	..	175,432	40,338	215,770	1,496,631	1,712,401	79	257	336	"	12″, 12″, 12″	4½″, 6″, 6″	100′ 140′ 100′	fair	30/11/94
Iron Bridge	..	Milligan, N.	..	..	"	..	..	..	..	"	..	9′ x 5′	155ch.	adit	..	..	..	..	..	..	..	..	..	Nos. 5 pulso	and meters	7,	natural	29/11/94
Granity Creek	..	Murray, Thomas		3	"	1	4′ to 40′	7′	varies	"	..	9′ x 6′	22ch., 37ch.	"	..	..	..	..	..	20	..	20	..	..	..	..	water-blast	28/3/94
Waitakere, Charleston	..	Humphries, Jesse		10	brown	1	12′	12′	"	opencast	..	..	..	..	60	..	60	208	268	1	..	1	horse	..	..	..	..	18/5/94
Whitecliffs–Buller Road	..	Croawell, C.	..	3	glance	1	8′	8′	W.	driving	..	..	..	..	100	..	100	274	374	..	1	1	"	..	..	..	natural	30/8/94
LONGFORD.																										
Alexander	..	Rear, Robert	..	3	"	1	2′ 8″	all	45° E.N.E.	longwall	..	..	..	adit	..	..	..	282	282	1	1	2	hand	..	..	..	"	22/6/95
BOATMAN'S.																										
Coghlan's	..	..		6	"	1	12′	8′	W. 1 in 3	bord and pillar	..	..	..	"	..	..	..	370	370	sto	pp	ed	..	..	..	..	"	14/2/94
Archer's	..	Archer, D.	..	3	"	1	10′	8′	W.N.W.	ditto	..	..	..	dip-drive	300	..	300	380	680	..	1	1	horse	..	..	..	"	8/12/94
REEFTON.																										
Murray Creek	..	Bolitho, Thomas		11	"	1	12′	7′	W. 1 in 3	"	1	3′ x 5′	25′	adit	300	..	300	7,460	7,760	1	1	2	hand	..	..	..	"	7/12/94
Golden Treasure	..	Davidson, J. G.	..	23	"	1	15′	9′	1 in 4	"	..	..	..	"	250	50	300	4,440	4,740	1	1	1	"	..	..	..	"	10/9/94
Phœnix	..	McMurtrie, D.	..	10	"	1	60′	12′	..	"	..	..	..	"	1,000	..	1,000	6,337	7,337	1	2	3	"	..	..	..	"	10/9/94
Lankey's Gully	..	Lamberton, W.	..	17	"	1	6′	5′	level	"	..	..	..	"	481	..	481	5,490	5,971	1	2	3	"	..	..	..	"	9/10/94
Reefton	..	..		4	"	1	2′	2′	N.W. 1 in 5	"	..	6′ x 4′	800′	"	..	..	..	40	40	sto	pp	ed	"	..	..	..	"	..
Cochrane's	..	Cochrane, D. L.	..	2	"	1	9′	7′	1 in 4	"	..	..	..	"	..	..	..	370	370	sto	pp	ed	"	..	..	..	"	..
Progress	..	Halley, William	..	14	"	1	5′	all	1 in 12	"	..	..	100′	"	1,050	..	1,050	4,707	5,757	..	2	2	"	..	..	..	"	14/9/94
Breen's	..	Breen, P.	..	2	"	1	5′	"	1 in 3	"	..	..	66′	"	321	..	321	100	421	1	1	2	"	..	..	..	"	11/9/94
Sir Francis Drake	..	Casley, George	..	7	"	1	6′	"	1 in 4	opencast	..	..	..	..	330	..	330	1,346	1,676	1	..	1	horse	..	..	..	"	11/9/94
Cumberland	..	Pilling, James	..	3	"	1	8′	"	E. 1 in 5	bord and pillar	..	..	..	adit	200	..	200	780	980	..	1	1	hand	..	..	..	"	7/3/95
GREYMOUTH.																										
Blackball	..	Scott, Joseph	..	5	bitum.	1	12′	9′	S.W. 1 in 6	ditto	..	9′ x 6′	1,232′	"	25,180	1,880	27,060	4,105	31,165	16	80	96	horse	..	..	..	furnace	12/12/94
Brunner	..	Bishop, James	..	30	"	1	7′	all	S.W. 1 in 4	"	..	10′ x 7′	3,000′	engine-plane	93,136	28,049	121,185	1,033,221	1,154,406	66	242	308	engine	16″	8″	..	fair	13/12/94
Coal-pit Heath	..	"	..	18	"	1	16′	..	S.W. 1 in 4	"	..	..	..	..	..	..	..	577,190	577,190	..	..	..	..	..	..	..	..	..
Tyneside	..	"	..	..	"	1	16′	..	S.W. 1 in 4	"	2	10′ and 6′ x 6′	116′ and 25′	..	..	..	..	18,398	18,398	..	..	..	..	..	..	..	..	..
Wallsend	..	"	..	..	"	1	16′	..	S.W. 1 in 4	"	2	11′ and 14′	670′	..	..	..	..	205,539	205,539	..	..	..	..	..	..	..	..	..
MALVERN.																										
Springfield, Springfield	..	Barker, H.	..	18	brown	1	2′	all	S.E. 1 in 6	..	..	dip-drive	..	dip-drive	783	221	1,004	71,760	72,764	..	2	2	horse	..	..	..	natural	25/6/94
Kowai Pass, Springfield	..	Taylor and Smith		2	"	1	3′ 6″	"	..	..	..	"	..	..	..	..	..	559	559	..	..	..	..	..	..	..	..	23/6/93
Sheffield, Canterbury	..	Austen Brothers	..	32	"	2	2′ 3″	"	S.70° E.21°	narrow	1	5′ 7″	160′	incline	1,890	..	1,890	40,214	42,104	1	6	7	horse	1″	6″	140′	natural	25/6/94

Statistics of Workings in Coal-mines, 1894—*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 1894.			Approximate Total Output to 31st December, 1893.	Approximate Total Output to 31st December, 1894.	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.*																										
MALVERN—*continued.*													Tons.	Tons.	Tons.	Tons.	Tons.									
Homebush, South Malvern ..	McIraith, J. A. ..	22	brown	1	7′	all	E. 10° S. 1 in 3	bord and pillar	2	5′ x 6′, 3′ 6″ x 3′	40ch., 60ch.	adit	3,438	10	3,448	96,893	100,341	2	7	9	horse	..	..	..	natural	7/12/94
Whitecliffs, South Malvern ..	Leeming, W. ..	14	"	1	6′	"	E. 5° S. 30°	narrow	1	incline	..	incline	2,469	..	2,469	26,476	28,945	1	5	6	"	..	..	..	..	27/6/94
Glenroy, South Malvern ..	Febbes, W. ..	1	"	1	..	..	..	..	..	..	..	..	..	..	..	115	115	1	..	1	..	..	..	..	..	..
Snowdon, Rakaia Gorge ..	Gerard, W. (owner)	..	"	1	14′	8′	N. 80° E.	narrow	1	4′ x 4′	90′	shaft	150	5	155	580	735	1	..	1	horse	..	..	..	..	19/6/93
Mount Hutt, Rakaia Gorge ..	Murray-Aynsley, CP	..	"	2	2′	4′	..	open	..	..	..	..	40	..	40	92	132	..	1	1	..	..	..	..	..	21/6/93
Rockwood, Malvern ..	Levick, H. ..	7	"	1	7′ to 10′	8′	S. 12°	narrow	1	3 diam.	12′	adit	..	..	..	1,143	1,143	..	..	..	hand	..	..	..	..	..
Acheron, Lake Coleridge ..	Murchison, J. ..	25	anthracite	1	4′	all	S.W. 18°	"	..	..	..	"	60	..	60	297	357	..	1	1	..	..	..	..	..	15/1/95
Mount Somers, Ashburton ..	Park, G. ..	30	brown	1	30′	12′	S.60° E.10°	bord and pillar	..	5′ 6″	..	"	682	676	1,358	18,607	19,965	..	3	3	..	..	..	..	natural	5/12/93
Rutherford's, Albury ..	Straw, M. ..	3	"	1	..	10′	..	ditto	..	6′ x 5′	..	incline	312	..	312	688	1,000	1	2	3	hand	..	..	..	..	12/7/94
Duke's, Kakahu	Duke, James ..	..	"	1	30′	10′	..	"	..	..	..	open	..	..	..	900	900	..	..	..	..	..	..	..	..	9/6/93
Waihao Forks, Waimate ..	McPherson, D. ..	..	"	1	..	..	..	open	..	..	..	"	20	..	20	90	110	..	1	1	..	..	..	..	..	28/6/93
Studholme, Waimate ..	Cameron, G. H. ..	..	"	1	..	..	..	narrow	..	..	..	adit	..	..	..	84	84	..	..	..	..	..	..	..	..	14/7/94
NORTH OTAGO.																										
Wade's, Kurow	Scott, David ..	15	"	1	..	..	..	..	1	6′ x 2′ 6″	53′	..	..	..	..	4,305	4,305	1	2	3	..	..	..	..	..	4/6/94
Phillips's, Kurow	McCaffrey, P. ..	6	"	1	indefinite	..	N.E. 45°	..	1	8′ x 6′	50′	shaft	268	..	268	960	1,228	..	2	2	hand	..	..	..	..	16/5/94
Wharekuri, Kurow ..	Cairns, W. B. ..	28	"	1	18′	8′	S.60° W.60°	narrow	1	4′ x 3′	80′	adit	128	..	128	9,333	9,461	1	2	3	"	..	..	..	..	15/5/94
Wharekuri, Kurow ..	Collins, J. D. ..	3	"	1	18′	8′	S.60° W.60°	"	1	6′ x 5′	75′	"	323	..	323	959	1,282	..	1	1	"	..	..	..	..	15/5/94
St. Andrew's, Papakaio ..	Nimmo, Thomas	16	"	1	8′	7′	E. 15°	bord and pillar	1	4′ x 2′ 6″	60′	"	1,405	..	1,405	18,023	19,428	1	4	5	horse	..	..	..	..	18/5/94
Prince Alfred No. 1, Papakaio	Willetts, John ..	25	"	1	7′	6′	E. 10° S. 1 in 5	ditto	1	4′ x 4′	50′	"	1,336	..	1,336	35,445	36,781	2	5	7	hand	..	..	..	..	18/5/94
Ngapara, Ngapara	Nimmo, G. S. ..	16	"	1	18′ to 25′	7′ to 8′	N. 5° E. 1 in 4	"	1	6½′ x 4½′	15ch.	"	552	..	552	12,466	13,018	1	2	3	horse	..	..	..	..	14/4/94
Rosebury, Otepopo	Smith, George ..	11	"	1	5′	all	..	"	1	..	..	"	356	..	356	868	1,224	..	2	2	hand	..	..	..	..	3/6/94
Early Bank, Otepopo ..	Frame, W. ..	3	"	1	3′ 9″	"	E. 1 in 9	"	1	4′ x 2′	50yd.	incline	..	..	..	281	281	..	..	..	..	..	..	..	..	3/6/94
SHAG POINT.																										
Shag Point, Shag Point ..	Shore, Thomas ..	31	"	2	3′ and 4′	"	E. 1 in 4	"	3	16½′ x 6′ 6′ 8″ x 5′	200′ to 450′	shaft	11,440	3,642	15,082	241,793	256,875	26	63	89	engine	2′	6″	450′	steam	2/8/94
Allandale, Shag Point ..	Campbell, J. ..	7½	"	1	7′	6′	..	"	1	5½′ x 5′	350′	engine-plane	13,379	6,063	19,442	48,365	67,807	9	32	41	"	2′	5″	..	natural	3/8/94

Central Otago.																									
Cole Creek, Roxburgh ..	Jones, John ..	24	lignite	1	unknown	20′	W. 1 in 7	open	..	..	..	..	863	..	863	9,471	10,334	3	..	3	..	..	..	..	..	12/9/93
McPherson's, Roxburgh ..	McPherson, M. ..	24	"	1	"	18′	..	"	..	..	..	..	2,876	..	2,876	5,081	7,957	3	..	3	..	..	..	..	..	12/9/93
Perseverance, Roxburgh ..	Craig, James ..	7	"	1	"	10′	..	bord and pillar	..	..	..	adit	1,367	..	1,367	4,791	6,158	..	2	2	hand	..	..	..	..	12/9/93
Alexandra, Alexandra ..	Thomson, W. ..	15	brown	1	14′	5′ 6″	N. 20° E. 1 in 7	ditto	2	5′ x 2½′	60′	shaft	1,888	..	1,888	16,315	18,203	1	2	3	horse	..	..	..	natural	22/11/94
Macqueenville, Alexandra ..	Lett, Robert ..	8	"	1	14′	5′	S. 75° W. slight	"	2	3′ x 4′ 9″	62′	"	1,791	..	1,791	8,149	9,940	3	3	6	"	..	..	..	"	22/11/94
Enterprise, Alexandra ..	Rivers, George ..	1	"	1	..	6′	..	"	1	4′ x 3′	40′	"	214	..	214	..	214	1	1	2	"	..	..	..	"	22/11/94
Finlay's, Alexandra ..	Finlay, R. M. ..	1	"	1	..	6′	..	"	1	4′ x 3′	40′	"	159	..	159	..	159	1	1	2	..	..	..	..	..	22/11/94
Cambrian, Cambrian's ..	Dunge, C. ..	10	"	1	12′	all	N.W. 30°	open	..	..	..	..	1,090	..	1,090	7,939	9,029	3	..	3	..	..	..	..	..	15/12/93
Welshman's Gully, Cambrian's	Jones, J. R. ..	33	lignite	1	30′	28′	W. 10°	"	..	..	..	..	1,461	..	1,461	17,474	18,935	3	..	3	..	..	..	..	..	15/12/93
Blackstone Hill	Dunsmuir, A. ..	28	"	1	10′	all	N. 70°	"	..	..	..	..	282	..	282	968	1,250	1	..	1	..	..	..	..	..	18/12/93
Rough Ridge, Idaburn ..	Beck and McLean	8	"	1	30′	25′	N. 5°	"	..	..	..	..	1,066	..	1,066	7,372	8,438	3	..	3	..	..	..	..	..	18/12/93
Idaburn, Idaburn	White, John ..	24	"	1	23′	all	N. 30°	"	..	..	..	..	838	..	838	26,436	27,274	2	..	2	..	..	..	..	..	18/12/93
Border Colliery, Idaburn ..	Turnbull, G. ..	24	"	1	12′	"	N.W. 20°	"	..	..	..	..	385	..	385	2,646	3,031	1	..	1	..	..	..	..	..	18/12/93
Gimmerburn, Gimmerburn ..	Dougherty, Charles	2	br'wn	1	12′	12′	..	"	..	..	..	..	240	..	240	958	1,198	2	..	2	..	..	..	..	..	19/12/93
Hill's Creek, Hill's Creek ..	McKnight, J. ..	29																							
Commercial, Kyeburn ..	Archer, Christian	10	"	1	8′	6′	..	stope	..	..	..	incline	657	..	657	9,132	9,789	2	2	4	horse	..	..	..	..	19/12/93
Perseverance, Kyeburn ..	" ..	15																							
Kyeburn, Kyeburn	Combes, William	21	"	1	10′	10′	S.45°W.40°	narrow	1	3′ x 2′	500′	adit	120	..	120	14,829	14,949	..	2	2	hand	..	..	..	..	19/12/93
Waikerikeri, Clyde	Griffiths, G. ..	13	"	3	20′	..	..	stoping	2	6′ x 3′	160′	shaft	20	..	20	19,369	19,389	..	1	1	horse	..	..	..	..	25/5/93
Dairy Creek, Clyde	Marie, T. C. ..	22	"	1	unknown	..	S. 45°	bord and pillar	1	4′ x 3½′	6′	incline	..	..	..	3,731	3,731	..	..	..	"	..	..	..	..	25/5/93
Kawarau, Bannockburn ..	Pryde, J. ..	17	"	1	8′	8′	N. 1 in 4½	ditto	1	6′ x 6′	34′	"	1,154	..	1,154	15,945	17,099	..	3	3	"	..	..	..	..	24/11/94
Cairnmuir, Bannockburn ..	Goodger, G. ..	2	"	1	..	..	..	stoping	..	..	..	"	555	..	555	297	852	..	2	2	"	..	..	..	..	24/11/94
Excelsior, Bannockburn ..	McNulty, E. ..	13	"	1	17′ to 18′	12′	E. 6°	"	1	4′ x 6′	40′	"	180	..	180	4,490	4,670	..	1	1	"	..	..	..	..	24/11/94
Nulli Secundus, Bannockburn	Parcell, W. ..	3½	"	1	10′	6′	S. 40°	bord and pillar	1	6′ x 4′	50′	adit	..	..	..	632	632	..	..	..	..	..	..	..	..	24/11/94
Bannockburn, Bannockburn	Wilson, T. ..	5	"	1	6′ to 7′	all	..	ditto	1	6′ x 4′	20′	shaft	5	..	5	195	200	..	1	1	..	..	..	..	..	15/4/92
Nevis, Nevis	O'Brian, P. ..	1	"	1	20′	20′	..	open	..	..	..	..	60	..	60	..	60	1	..	1	..	..	..	..	..	30/11/94
Gibbston, Gibbston ..	Cowan, James ..	27	"	4	5′ each	all	W. 22½°	narrow	1	6′ x 5′	80′	adit	828	..	828	17,787	18,615	..	2	2	..	..	..	..	..	14/3/93
Gibbston Saddle, Gibbston ..	Macale, M. ..	8	"	1	18′	"	..	open	..	..	..	..	165	..	165	1,664	1,829	1	..	1	..	..	..	..	..	14/3/93
Cardrona, Cardrona ..	McDougal, R. ..	10	"	1	20′	20′	..	"	..	..	..	..	719	..	719	4,981	5,700	4	..	4	..	..	..	..	..	18/4/92
South Otago.																									
Fernhill, Abbotsford ..	Grey, James ..	17	"	1	19′	10′	N. 10° E. 1 in 10	bord and pillar	1	4¾′ x 4½′	..	adit	1,715	4,156	5,871	94,718	100,589	2	15	17	horse	..	..	..	furnace	14/8/94
Chain Hills, Abbotsford ..	Allen, A. G. ..	1	"	1	6′ 8″	6′ 8″	..	ditto	1	6′ x 5′	100′	incline	..	..	..	842	842	..	..	..	hand	..	..	..	..	..
Freeman's, Abbotsford ..	Green, E. R. ..	13½	"	1	6′ 8″	6′ 8″	E. 10° N.	"	5	4′ x 4′ to 10′ x 4′	45′ to 140′	engine-plane	5,426	2,328	7,754	187,626	195,380	10	20	30	horse & engine	12″	5″	161′	steam	14/8/94
Walton Park, Green Island ..	Pollock, James ..	24	"	1	15′ to 17′	8′	E. 1 in 9	"	3	6′ x 4′ to 12′ x 4′	25′ to 175′	shaft	14,296	4,986	19,282	446,585	465,867	9	44	53	engine	4″	9¾″	170′	furnace	13/8/94
Saddle Hill, Green Island ..	Christie, James ..	20	"	1	19′ 6″	10′	E. 1 in 10	"	3	5′ x 2′	50′	incline	509	..	509	80,856	81,365	1	3	4	horse	..	..	..	natural	10/8/94
Burwell, Green Island ..	Harris, Adam ..	3	"	1	4′	all	..	"	1	5′ x 4′	..	"	299	417	716	983	1,699	2	2	4	"	..	..	..	"	10/8/94
Glenochiel, Green Island ..	Bryce, D. ..	13⅓	"	1	16′	7′	varies	"	1	8′ x 4′	43′	"	1,411	..	1,411	10,128	11,539	1	3	4	"	..	..	..	"	10/8/94
Brighton, Brighton ..	Walker, James ..	8	"	1	4′	all	..	"	..	..	..	"	329	60	389	2,820	3,209	1	1	2	"	..	..	..	"	11/8/94
McColl's, Brighton	McColl, D. ..	6	"	2	4′ to 5′	4′	E. 12°	"	..	..	..	"	216	..	216	513	729	..	2	2	"	..	..	..	"	11/8/94
Mosgiel, Mosgiel	Sneddon, James ..	11	"	1	15′	7′	S. 1 in 10	"	2	4′ x 4′ 6′ x 4′	27½′ x 32′	engine-plane	1,466	3,705	5,171	41,723	46,894	3	7	10	engine, siphon, & pump	..	..	..	"	9/8/94
Salisbury, Mosgiel	Reid, Donald ..	3	"	1	8′	5′	..	"	1	5′ x 6′	264′	adit	..	..	..	4,433	4,433	..	..	..	..	..	..	..	..	23/8/93
Bruce No. 2, Milton ..	Hardwick, N. ..	20	"	1	16′	6′ to 7′	N.30°E.10°	"	1	4½′ x 14½′	25′															
" " ..	" ..	19	"	1	12′ 6″	6′	varies	"	1	4′ x 3′	20′	"	505	..	505	22,521	23,026	2	3	5	horse	..	..	..	natural	25/7/94

Statistics of Workings in Coal-mines, 1894—*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 1894.			Approximate Total Output to 31st December, 1893.	Approximate Total Output to 31st December, 1894.	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.*				Tons.	Tons.	Tons.	Tons.	Tons.									
South Otago—*continued.*																										
Real McKay, Milton ..	Young, A. ..	26½	brown	1	20′	10′	N.E. to E. 1 in 8	bord and pillar	1	4½′ x 3′	34′	adit	676	..	676	17,731	18,407	..	2	2	hand	..	..	..	natural	25/7/94
Adam's Flat, Adam's Flat ..	Reid, John ..	12	lignite	1	14′	10′	S. 45°	open	..	..	..	..	144	..	144	1,537	1,681	2	..	2	..	..	..	..	..	3/10/93
Paskell's, Adam's Flat ..	Paskell, John ..	30	"	1	8′	all	N.E. 1 in 6	"	..	..	..	..	2	..	2	339	341	..	..	..	..	..	..	..	..	3/10/93
Wallsend, Lovell's Flat ..	Hewitson, Robert	24	"	1	20′	"	S. 20° W. 1 in 4	"	..	..	..	..	497	..	497	7,420	7,917	2	..	2	..	..	..	..	..	25/7/94
Gibson's, Lovell's Flat ..	Gibson, James ..	1	pitch	1	20′	6′	..	..	2	11′ x 4′, 8′ x 4′	320′, 250′	shaft	..	..	..	89	89	..	..	..	..	..	..	..	..	..
Elliott Hill, Lovell's Flat ..	McDougall, M. ..	5	brown	1	20′	6′	E. 15° to N. 5°	bord and pillar	..	..	90′	adit	327	..	327	1,689	2,016	1	2	3	..	..	..	..	..	25/7/94
Benhar, Benhar	McSkimming, —	31	"	1	30′	12′	S. 17°	ditto	2	4′ x 4′, 8′ x 6′	48′, 462′	engine-plane	3,768	493	4,261	72,980	77,241	1	6	7	engine	..	..	..	natural	24/7/94
Rigfoot, Benhar	Aitkin, Thomas ..	8	"	1	18′	12′	S. 12°	"	1	6′ x 8′	240′	incline	532	150	682	4,060	4,742	1	1	2	horse	6″	2″	60′	"	24/7/94
Kaitangata, Kaitangata ..	Watson, W. P., Gen. Manager	18	pitch	1	10′ to 40′	10′ to 35′	W. 45°	"	1	13′ x 5′ 6″	704′	engine-plane & shaft	46,112	20,979	67,091	748,450	815,541	19	154	173	engine	2′	6″	704′	furnace	21/12/94
Castle Hill No. 1, Kaitangata	Carson, M. ..	7½	"	1	12′ to 14′	8′	N. 20°	"	1	3′ 9″ x 2′ 6″	54′	adit	173	725	898	8,416	9,314	1	4	5	horse	..	..	..	natural	20/7/94
Castle Hill No. 2, Kaitangata	Gow, W., General Manager	1	"	1	5′ to 15′	5′ to 8′	..	"	1	10′ diam. 11′ x 6′ 6″	400′ and 2,200′	shaft & engine-plane	9,275	..	9,275	..	9,275	22	38	60	engine	..	..	..	"	21/12/94
Wangaroa, Kaitangata ..	Smith, Joseph ..	14	brown	1	10′ 6″	8′	E. 1 in 6	"	..	8′ x 6′	..	adit	11	4	15	945	960	..	1	1	hand	..	..	..	"	6/10/93
Lismahagow, Kaitangata ..	Sewell, R. M. ..	13	pitch	1	4′	4′	N. slightly	"	..	..	..	"	49	..	49	1,433	1,482	..	1	1	"	..	..	..	"	6/10/93
Crofthead, Kaitangata ..	Mackie, E. ..	7	"	1	12′	8′	N. 20°	"	..	6′ x 5′	396′	"	..	..	..	6,713	6,713	..	..	..	..	..	..	..	..	6/10/93
Mainholm, Waipahi ..	Lischmuir, F. ..	8½	lignite	1	15′	all	..	open	..	..	..	open	1,391	..	1,391	9,631	11,022	3	..	3	horse	..	..	..	..	19/12/94
Conical Hills, Waipahi ..	Shennan, W. ..	1	"	1	..	..	..	..	..	..	..	..	25	..	25	..	25	..	1	1	..	..	..	..	..	..
Southland.																										
Waikoikoi, Pukerau ..	Cullen, J. ..	7	"	1	4′	..	..	open	..	..	..	..	28	..	28	152	180	..	1	1	..	..	..	..	..	11/10/93
Valley Road, Pukerau ..	Orchard, E. C. ..	5	"	1	20′	all	..	"	..	..	..	..	469	..	469	686	1,155	3	..	3	..	..	..	..	..	22/8/94
O'Hagan's, Pukerau ..	O'Hagan, C. ..	14	"	1	16′	10′	W. 1 in 10	bord and pillar	..	6′ x 7′	496′	adit	1,110	9	1,119	20,367	21,486	..	3	3	horse	..	..	..	..	22/8/94
Perseverance, Pukerau ..	McKenzie, J. ..	7	"	1	16′	..	N. 20°	ditto	..	8′ x 4′	330′	"	..	..	..	2,052	2,052	..	..	..	..	..	..	..	..	22/8/94
Dudley's, Pukerau ..	Dudley, J. D. ..	5	"	1	16′	16′	..	open	..	..	..	..	272	..	272	630	902	1	..	1	..	..	..	..	..	22/8/94
Frank's, Pukerau ..	Mapp, R. ..	3	"	1	6′	4′	level	adit	..	..	..	..	..	..	..	45	45	..	..	..	..	..	..	..	..	..
White Rigg, Gore ..	Telfor and Porter	12	"	1	5′ to 8′	all	..	open	..	..	..	..	600	..	600	3,076	3,676	2	..	2	..	..	..	..	..	24/8/94
Hefferman's, Gore ..	Hefferman, P. ..	16	"	1	12′	"	N. 15°	"	..	..	..	..	222	..	222	1,092	1,314	1	..	1	..	..	..	..	..	24/8/94

Johnston's, Gore	Johnston, W.	1	lignite	1	2′ to 10′	all	..	open	..	..	..	..	155	..	155	..	155	1	..	1	..	..	..	..	..	24/8/94
Waikaka Valley, Gore	Sarginson, J. H.	8½	"	1	8′	8′	..	"	..	..	..	..	12	..	12	856	868	1	..	1	..	..	..	..	..	14/10/93
Hoffman's, Gore	Hoffman, J.	11	"	1	10′	all	N. 12°	"	..	..	..	..	260	..	260	2,705	2,965	4	..	4	..	..	..	..	..	24/8/94
Regefsky's, Gore	Regefsky, A.	3	"	1	3′	"	..	"	..	..	..	..	9	..	9	48	57	1	..	1	..	..	..	..	..	24/8/94
Clukoski's, Gore	Clukoski, J.	3	"	1	3′	"	..	"	..	..	..	..	6	..	6	22	28	..	1	1	..	..	..	..	..	24/8/94
Leitzi's, Gore	Leitzi, M.	15	"	1	6′ to 7′	"	..	"	..	..	..	..	..	..	..	1,101	1,101	..	..	..	..	..	..	..	..	14/10/93
Kirk and Sheddon's, Gore	Kirk and Sheddon	2	"	1	6′	"	..	"	..	..	..	..	..	..	..	140	140	..	..	..	..	..	..	..	..	24/8/94
Excelsior, Gore	Fryer, H.	2	"	1	8′	"	..	"	..	..	..	..	..	..	..	807	807	..	..	..	..	..	..	..	..	24/8/94
Dryden's, Gore	Dryden, W.	1	"	1	10′	"	..	"	..	..	..	..	..	..	..	438	438	..	..	..	..	..	..	..	..	24/8/94
Green's East, Gore	Stark, J.	6	"	1	19′	12′	..	bord and pillar	..	7′ x 9′	100′	incline	1,791	..	1,791	5,853	7,644	2	5	7	horse	..	..	..	..	20/8/94
Smith's East, Gore	Smith, John	5½	"	1	12′	8′	S. 60°	ditto	..	..	..	adit	655	..	655	1,260	1,915	..	1	1	"	..	..	..	..	20/8/94
Smith's East, Gore	Smith, Richard	3	"	1	6′	6′	..	open	..	..	..	..	52	..	52	127	179	1	..	1	..	..	..	..	..	20/8/94
Kingdon's East, Gore	Kingdon, N. S.	..	"	1	6′	6′	..	"	..	..	..	..	27	..	27	..	27	..	1	1	..	..	..	..	..	..
Knapdale, Knapdale	Irvine Brothers	9	"	1	35′	25′	vertical	stoping	1	..	62′	adit	606	..	606	1,592	2,198	..	1	1	..	..	..	..	..	24/8/94
Pemble's, Chatton	Harvey, James	17	"	1	16′ to 26′	16′ to 18′	90° strike	open	..	..	..	..	224	..	224	11,052	11,276	1	..	1	..	..	..	..	..	29/8/94
Hunter's, Chatton	Hunter, Thomas	9½	"	1	16′	12′	..	"	..	..	..	..	116	..	116	1,026	1,142	1	..	1	..	..	..	..	..	29/8/94
Wendon, Wendon	Graham, Thomas	1	"	1	..	..	..	"	..	..	..	..	30	..	30	..	30	1	..	1	..	..	..	..	..	..
Pacey's East, Chatton	Pacey, W. R.	18	"	1	30′	20′	S.E. 1 in 6	"	..	..	..	..	320	..	320	7,253	7,573	2	..	2	..	..	..	..	..	29/8/94
South Brook, Waikaka	Ayson, William	1	"	1	..	..	..	"	..	..	..	..	..	..	..	55	55	..	..	..	..	..	..	..	..	19/10/93
McGill's, Wendon	McGill, John	1	"	1	14′	..	..	"	..	..	..	..	84	..	84	..	84	1	..	1	..	..	..	..	..	27/8/94
McDonald's, Wendon	McDonald, —	2	"	1	..	all	..	"	..	..	..	..	40	..	40	10	50	1	..	1	..	..	..	..	..	27/8/94
Edge's, Wendon	Evans, G. H.	16	"	1	8′ to 12′	"	N. 60° E.	"	..	..	..	..	370	..	370	2,067	2,437	1	..	1	..	..	..	..	..	27/8/94
No. 14, Waikaka	Edge, W. H.	6½	"	1	8′ to 7′	4′	W. 35°	open	..	..	..	..	..	..	..	458	458	..	..	..	..	..	..	..	..	28/8/94
Mandeville, Riversdale	McAllister, E.	3	"	1	3′ to 8′	all	..	"	..	..	..	..	10	..	10	24	34	..	1	1	..	..	..	..	..	31/10/92
Waimea, Riversdale	Smith, Jno.	4	"	1	..	"	..	"	..	..	..	..	973	..	973	1,154	2,127	3	..	3	..	..	..	..	..	29/10/94
Maslin's, Wendon	Maslin, Thos.	3	"	1	20′	18′	..	stoping	..	..	..	..	300	..	300	386	686	..	1	1	..	..	..	..	..	30/10/94
Perseverance, Waikaia	Vial, Edward	3	"	1	6′ to 7′	all	E. 1 in 6	open	..	..	..	..	177	..	177	261	438	1	..	1	..	..	..	..	..	31/8/94
Cambrian, Waikaia	McIvor, W.	3	"	1	5′ to 8′	"	E. 1 in 6	"	..	..	..	..	63	..	63	99	162	2	..	2	..	..	..	..	..	31/8/94
Northcote's, Waikaia	Northcote, T.	3	"	1	10′ to 15′	8′	E. 1 in 5	bord and pillar	..	..	..	..	134	..	134	325	459	2	..	2	..	..	..	..	..	31/8/94
Hill's, Waikaia	Hill, J. P.	3	"	1	..	..	..	open	..	..	..	..	150	..	150	153	303	2	..	2	..	..	..	..	..	31/8/94
Argyle, Waikaia	Cosgrove, J. B.	3	"	1	6′ to 7′	all	..	"	..	..	..	..	108	..	108	94	202	2	..	2	..	..	..	..	..	29/10/92
Mataura, Mataura	Sleeman, C. P.	18	"	1	16′	"	N.W. 4°	"	..	..	..	..	2,679	..	2,679	9,995	12,674	4	..	4	..	..	..	..	..	25/8/94
Beattie's, Mataura	Beattie and Coster	18	"	1	..	"	..	"	..	..	..	..	376	..	376	17,646	18,022	2	..	2	..	..	..	..	..	25/8/94
Town's, Mataura	Town, C.	7	"	1	16′	"	..	"	..	..	..	..	419	..	419	7,583	8,002	1	..	1	..	..	..	..	..	25/8/94
McGowan's, Mataura	McGowan, F.	4	"	1	4′	"	..	"	..	..	..	..	..	..	..	125	125	..	..	..	..	..	..	..	..	19/10/94
Townshend's, Mataura	Townshend, E.	11	"	1	12′	8′	level	"	..	..	..	..	25	..	25	313	338	..	1	1	..	..	..	..	..	19/10/94
Mutch's, Mataura	Mutch, J. C.	4	"	1	4′	all	"	"	..	..	..	..	30	..	30	96	126	1	..	1	..	..	..	..	..	19/10/94
Smith's, Mataura	Smith, Hugh	2	"	1	4′	"	..	"	..	..	..	..	..	..	..	9	9	..	..	..	..	..	..	..	..	19/10/94
River View, Mataura	Nicol, L. D.	3	"	1	..	"	..	"	..	..	..	..	90	..	90	220	310	1	..	1	..	..	..	..	..	19/10/94
Genge's, Wyndham	Genge, Thomas	17	"	1	2′ to 3′	"	..	"	..	..	..	..	260	..	260	2,309	2,569	3	..	3	..	..	..	..	..	13/10/94
Edendale, Wyndham	McDonald, A.	4	"	1	5′	"	..	"	..	..	..	..	289	..	289	1,219	1,508	1	..	1	..	..	..	..	..	15/10/94
Shields's, Wyndham	Shields, William	14	"	1	6′	"	..	"	..	..	..	..	679	..	679	5,479	6,158	1	..	1	..	..	..	..	..	15/10/94
Marshall's, Wyndham	Marshall, H.	3	"	1	3′	"	..	"	..	..	..	..	50	..	50	90	140	1	..	1	..	..	..	..	..	15/10/94
Munro's, Wyndham	Munro, E.	7	"	1	5′	"	..	"	..	..	..	..	1,078	..	1,078	4,637	5,715	2	..	2	..	..	..	..	..	13/10/94
Robin Hood, Pine Bush	Trotter, R. A.	13	"	1	15′	"	..	"	..	..	..	..	102	..	102	448	550	1	..	1	..	..	..	..	..	11/11/93
Monagan's, Pine Bush	Monagan, A.	2	"	1	8′	6′	..	"	..	..	..	..	..	..	..	11	11	..	..	..	..	..	..	..	..	11/11/93
Hokonui, Winton	Hayes, John	7	pitch	1	8′	all	W. 14°	bord and pillar	1	4′ x 4′	..	engine-plane	10,140	2,550	12,690	23,002	35,692	7	25	32	engine	..	..	..	furnace	12/10/94
Fairfax, Fairfax	Graham, P. S.	16	lignite	1	5′ 6″	"	N. 60° W. 4°	ditto	..	5′ 6″ x 7′	..	adit	553	..	553	9,155	9,708	..	2	2	hand	..	..	..	natural	27/10/94
Isla Bank, Fairfax	Slattery, M.	14	"	1	8′	"	N.W. 5°	open	..	..	..	..	384	..	384	2,548	2,932	1	..	1	..	..	..	..	..	27/10/94
Salton's, Fairfax	Salton, R.	1	"	1	5′	5′	..	bord and pillar	..	..	..	adit	160	..	160	..	160	..	1	1	hand	..	..	..	natural	27/10/94

Statistics of Workings in Coal-mines, 1894—*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 1894.			Approximate Total Output to 31st December, 1893.	Approximate Total Output to 31st December, 1894.	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.									
Nightcaps No. 1, Nightcaps	Handyside, W., Gen. Manager	13	pitch	1	15′	all	N.E. 1 in 7	bord and pillar	1	6′ x 4′	130′	adit	10,738	..	10,738	129,704	140,442	14	14	28	horse	..	..	..	natural	24/10/94
Nightcaps No. 2, Nightcaps	Lloyd, J., Mine-manager	12	"	1	8′	"	N.E. to E. 1 in 4	ditto	1	5′ x 4′	..	"														
Nightcaps No. 3, Nightcaps		6	"	1	12′	"	S.80° E.50°	"	1	5′ diam.	60′	"														
Wallace Pit, Nightcaps ..	Reid, William ..	9	"	1	13′	"	S. 80° E. 5°	open	..	..	..	..	1,608	..	1,608	5,322	6,930	4	..	4	..	8″	5″	18′	..	24/10/94
No.1, Morley Village, Nightcaps	Brazier, J. ..	5½	"	1	10′	"	S. 80° E. 5°	"	..	..	..	..	..	..	..	2,096	2,096	..	..	..	..	..	..	..	..	18/4/93
No.2, Morley Village, Nightcaps	Brazier, J. ..	3	"	1	4′	"	N. 60° E. 5°	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Linton, Mount Linton	Chalmers, N. G.	4	"	1	10′	8′	N.W.	"	..	..	..	..	40	..	40	202	242	1	..	1	..	..	..	..	..	25/10/94
Orepuki, Orepuki	Love, A. ..	8	pitch	1	22′	9′	S.E.	stoop & room	1	7′ x 8′	120′	engine-plane	..	..	..	5,483	5,483	..	..	..	engine	16″	3″	..	natural	22/10/94
Cluny, Orepuki	Popham, J. ..	4	"	1	10′	5′	S. 12° W. 80°	open	..	..	..	..	..	..	..	156	156	..	..	..	..	..	..	..	..	19/9/92
Wairio, Nightcaps	Lloyd, John ..	11	"	1	9′	9′	N.E. 50°	bord and pillar	..	6′ x 6′	3 chains	adit	..	..	..	3,452	3,452	..	..	..	..	..	..	..	..	..
Morrison's, Benhar ..	Morrison, J. ..	4	lignite	1	15′	7′	S. 12°	ditto	..	8′ x 8′	100′	"	..	..	..	646	646	..	..	..	..	..	..	..	..	..
Owaka, Catlin's	Copan, W. ..	1	pitch	..	..	..	..	..	..	..	..	..	..	..	..	95	95	..	..	..	..	..	..	..	..	..
Riversdale, Waimea ..	Carmichael, J. ..	6½	brown	1	12′	all	N. 10°	open	..	..	..	..	..	..	..	3,711	3,711	..	..	..	..	..	..	..	..	..
Alley's, Nightcaps	Alley, Jesse ..	3	pitch	1	4′	all	..	"	..	..	..	..	..	..	..	193	193	..	..	..	..	..	..	..	..	..
													596,538	123,008	719,546	8,157,493	8,877,039								
Add output of following twelve mines, included in last year's statement but since 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	27,586								
																8,185,079	8,904,625								
Add output of Waikaka, Adam'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																	132,723								
Output of mines included in former statements, but whose operations were suspended prior to 1889																	172,529								
																	9,216,395								

HENRY A. GORDON, M.A.Inst.M.E., Inspecting Engineer.

APPENDIX II.

ACCIDENTS in COAL-MINES during the Year ending 31st December, 1894.

No. and Date.	Name of Mine.	Locality.	Cause of Accident.	Above Ground.	Below Ground.	Fatal.	Non-fatal.	Name of Sufferer.	Remarks.
1894.			*North Island.*						
1. Feb. 10	Taupiri Reserve	Huntly ..	Fall of coal ..	..	1	..	1	Jas. Holland	Lump of coal fell on his foot.
2. April 24	Taupiri Extended	" ..	" ..	..	1	..	1	Alf. Cadman	"
3. May 28	Ditto ..	" ..	Hand jarred while bunking-out	..	1	..	1	Robt. Colson	Not serious.
4. June 25	" ..	" ..	Injury to hand ..	..	1	..	1	Fredk. Cox ..	"
5. July 4	" ..	" ..	Injured by pick ..	..	1	..	1	T. McQuillan	"
6. " 9	" ..	" ..	Fall of coal ..	..	1	..	1	W. Waugh ..	Struck in eye by piece of coal.
7. " 26	" ..	" ..	Fall of a wedge ..	..	1	..	1	Edwd. Burke	Wedge fell on his foot.
8. Aug. 10	" ..	" ..	Finger jarred ..	..	1	..	1	Thos. Russell	Not serious.
9. Sept. 18	Waikato ..	Waikato ..	Arm bruised by coming in contact with a skip while escaping a fall of coal	..	1	..	1	T. Griffiths	"
10. Oct. 24	Taupiri Extended	Huntly ..	Fall of coal ..	..	1	..	1	Wm. Gilder	"
11. " 26	Ditto ..	" ..	Fell behind a skip	..	1	..	1	Robt. Robson	"
12. Nov. 12	" ..	" ..	..	1	..	..	1	C. G. Minnett	Rupture of hip.
			Middle Island.						
13. Jan. 10	Coalbrookdale	Coalbrookdale	Fall of timber ..	..	1	1	..	Wm. Hedley	Timber loosened by a shot just fired.
14. Feb. 24	"	Ditto ..	Pin of truck breaking	..	1	1	..	Silvio Martini	Leg broken by truck running back on him.
15. April 17	Mokihinui ..	Westport ..	Fall of coal from roof	..	1	..	1	Wm. Stirl ..	Fracture of ribs.
16. May 12	Iron Bridge ..	Coalbrookdale	Fall of coal at pillar	..	1	1	..	Robt. Gibson	There were some strong joints in coal at place, and it probably slipped on one of them.
17. " 24	Blackball ..	Grey ..	Fall of coal when holing	..	1	..	1	R. Greenshields	Arm dislocated at shoulder.
18. " 26	" ..	" ..	Coal flying from pick's point	..	1	..	1	Geo. Nuttall	Struck in eye.
19. Feb. 12	Gibston ..	Otago ..	No account ..	..	1	..	1	James Cowan	Arm broken.
20. April 11	Kaitangata ..	" ..	Run over by tub ..	..	1	1	..	Alex. Ramsey	Tub got unhitched. No one to blame.
21. May 5	" ..	" ..	" ..	..	1	1	..	A. Crawford	Runaway tub. No one to blame.
22. Sept. 27	Shag Point ..	" ..	Fall of coal from roof	..	1	..	1	J. McDonald	Spine seriously injured.
23. Nov. 21	Homebush ..	" ..	Ditto	..	1	1	..	S. McKircher	No one to blame.

Approximate Cost of Paper—Preparation, not given; printing (2,350 copies), £27 2s.

By Authority: SAMUEL COSTALL, Government Printer, Wellington.—1895.

Price 9d.]