

per minute. So far the Cave area has proved to be the best section of the mine, both in extent and quality of coal. It is anticipated that a new heading recently started eastward off the main winning heading will eventually tap the coal that is known to lie under and to the east of the present rope road, and which has been proved by borehole to be 16 ft. in thickness. Throughout the whole of the mine the timbering is done in a very creditable manner, whilst the ventilation is efficient. An increase of 12,704 tons has to be recorded in the output, which constitutes a record for the mine. Towards the latter part of the year a new section of the Buller Coalfield was discovered in the Charming Creek district, between the Ngakawau River and Seddonville Mine. Upon this area boring operations are being carried out to ascertain the continuity and thickness of the coal. So far one borehole has been completed, proving coal of good quality 20 ft. in thickness. This field may justify the development of a new mine, and give a new lease of life to State mining at Westport if the boring operations are successful.

Westport-Stockton Colliery (George H. Broome, general mining manager; H. McAvoy, mine-manager).—(18/12/09): This colliery has now been in constant operation for the past fifteen months, during which time mining operations have been carried on by double shift. The work has been confined to B tunnel section, where 92,942 tons of good quality coal has been obtained. The mine is worked on the bord-and-pillar system, the bords being driven as near as possible to the level course of the seam to facilitate trucking, whilst stentons are driven from level to level, thus cutting the area worked into pillars. Bords and stentons are driven 6 yards wide, whilst both hand and machine labour is employed. The Sullivan bord-and-pillar machines are used, capable of holing a face 6 yards wide to a depth of 6 ft. in twenty minutes. These electrically driven machines are giving every satisfaction. Ventilation throughout the mine is good. A Waddell fan 7 ft. in diameter is used, giving 80,000 cubic feet of air per minute at a $1\frac{1}{2}$ in. water-gauge. The fan is driven by a 30-horse-power three-phase induction motor. The company have two of these fans, but only one is at present in use. The natural drainage of the mine is very good, and the small Worthington pump used has a very small duty imposed on it. The small locomotives that do all the shunting in the mine weigh 1,300 lb., with a draw-bar pull of 2,500 lb. on the level, at a speed of 7.4 miles per hour. They are provided with a cable-reel, driven at a properly regulated speed by chain gearing, which enables them to have a working-radius of 300 yards from the nearest trolley-wire. The coal is brought from the lay-by inside B tunnel to the top of No. 2 incline by electrical locomotives which weigh 40,000 lb. each, and are equipped with the Sprague general type M control, which enables them to be worked singly or coupled as desired. They have a draw-bar pull of 7,500 lb. on the level at a speed of 8.2 miles per hour. Each of the main locomotives is equipped with a powerful Fell brake, which has been improved in various ways, and is now working very satisfactorily. Each locomotive when engaged in lowering coal is assisted by a brake-car, which also carries a Fell-brake equipment. On the down trip it runs behind the locomotive in front of the load, and on the up trip is hauled on the rear of the train for safety, in case of the breaking of a coupling. The brake-car is in charge of a second man, who acts as conductor, and attends to the switches at the various passing-places. At present there is only one car equipped with two brakes, but it is intended to replace with double brakes all single-brake cars. At the bins all coal is handled by three automatic side-tippers in charge of one man, and is then distributed by means of plate-band conveyors, belt-driven by D.C. motors. Bunker-doors are worked by hydraulic pressure, and do excellent work. The whole plant is working very efficiently, and for some considerable time has dealt with an output of 700 tons per day. Extension works: At the present, development work is being pushed on to enable further deposits of coal to be tapped. The Mangatini Bridge is nearing completion, and other formation contracts are well under way.

Millerton Colliery (owners, Westport Coal Company (Limited); William Dunn, local manager; William McCormack, mine-manager).—(28/10/09): During the year the tonnage raised and forwarded for shipment was 212,474 tons, which is a decrease of 104,127 tons on the preceding year. This large decrease was due to the breaking-out of an underground fire in the Mine Creek lay-by on the 28th February which necessitated the sealing-down and flooding of the mine, operations not being resumed until the 24th May.

Mine Creek area: A general improvement in the hardness and quality of the coal worked in this area is noticeable. Owing to the heaving of the bottom in No. 10 east level, caused by the flooding of the mine at the time of the fire, practically a new dip haulage road had to be driven from No. 11 east, in order to extract the pillars in this section.

Mangatini section: This area is being rapidly opened out, and so far shows coal of good quality and thickness. The coal at present is being lowered by a temporary system of jigs and main rope haulage, but a powerful lowering brake has been erected and the permanent roads laid for endless rope to a point of junction with the main haulage in the south heading of Mine Creek area.

New Tunnel district: The only work in this district has been the driving of the new tunnel 46 chains in length, to connect into Mine Creek area, and junction with the main south heading, thereby forming a new haulage-road at a grade of 1 in 10, and thus doing away with the extremely heavy Mine Creek Jig route, now in use, with a maximum grade of 1 in 2. This contract was carried on from both ends through very hard granite country, and a holeing effected in November last, both ends meeting with complete accuracy. The tunnel, which is driven 11 ft. by 7 ft. in the clear, will make a very fine haulage route, and will deliver the whole output from the Mangatini and Mine Creek sections. It is anticipated that a material increase will be effected in the output as a result of these improved conditions of haulage.

Denniston Collieries (owners, Westport Coal Company (Limited); J. C. Brown, local manager).—During the year the tonnage lowered down the inclines for shipment was 348,335 tons, which is a record output, and was won from the mines working single shift. The development work in connection with both mines is kept well in advance of requirements, and has proved very satisfactory, whilst pillar extraction has also given good results.