

compact shale and sandstones, where by comparison with the journal of the metals sunk through in Shaft No. 1. The nature of such metal being that, when kept free from water saturation, they withstand great pressure, though with saturation they soften and swell, as may reasonably be expected to do, through the action now taken by Inspector Binns, in causing these workings to be filled with water; that, in place of the flooded water acting as a support, I am of opinion, will have a material aiding tendency to keep heavy falls taking place within these workings, thus causing a weakening tendency upwards, through water being confined together, in time assisted by after downward pressure, aiding thus an early settlement from pressure from the sea. Though not losing sight of the provision made by Inspector for a rib of coal to be left 66 yards thick, I am strongly of opinion that the water so left confined in these workings, considering the soft nature of the strata, such weight would cause percolation, and ultimately find vent in volume into the future dip workings outside of this rib; the space made, forming a suction with weight of water on high side, would assist the percolation through the shales that exist on roof and also floor of coal.

From results of inspection made of those submarine workings, and in examinations of the few falls that have taken place throughout the workings have, in all instances, jammed themselves and settled sufficiently tight to withstand the downward pressure in about 20 to 25 feet, which includes the thickness of the coal wrought out, the falls appearing to take that of a wedge shape and key the measures thus:—

[Here diagram shown.]

That from such results it has, at first sight, led me to the conclusion—that is, assuming that all the pillars average 5 to 6 yards wide—that the Inspector has somewhat hurriedly arrived at his conclusions; as comparing the fact that the measures dip seaward 1 in 4, in that so far as they have gone, they appear to hold, the same dip that the amount of cover required being 150 feet is met with in the dip part of these workings and still increasing on working seawards.

Considering the interests of capital invested in opening out of these workings, and, jointly, that of the safety of the workings, all interests under such circumstances would be better protected by keeping the overhead measures constantly drained and free from standage water, and by adopting a system of stowing tight the four incline planes, with waste from the higher parts of the workings; while as such work advances I would be in favour of drawing the timbers from the bords or staces, and allow same to settle. By such a system a rib of coal one chain thick would be ample to withstand the future safety of the dip workings, and thus confine the area so treated; that by this system the interest of all concerned would be met from possible inroads or risk of danger.

At this stage I am met with, on comparing the tracing plan of these dip-workings supplied me by your company, I find large pillars showing 20, 33, also lower pillars between last bord and lower level 60 feet thick with bords showing as driven 10 and 15 feet wide (that is more particularly on the portion of workings to north), and roadways showing as regular driven (on plan), holding a given width. These portions of the workings I have not been able to traverse and judge for myself owing to their being flooded. While, on the other hand, the recent Government survey and plan of these submarine workings shows bords driven 20 feet, and in instances greater widths, together with bords running into each other, thereby leaving little or no pillar supports, in most instances 2 to 3 yards thickness of pillar holding. Thus for considerable extent in one place, more particularly where pillars have been crushed close to extreme north point of these workings, shows a space of fallen area and necessary crushed pillars, equal in the two falls of over quarter of an acre. Such discrepancies between the two plans are to me unaccountable.

If the Government plans are to be taken as the correct state (latest) of these workings, with such an extent of fallen area, and also thin pillars, then I am reluctantly compelled, with all prudence, to agree with the action taken by the Inspector. It would then be left for the best, ultimately, interests of the company the laying-out of a new plan of operations seaward, starting in the lower seam from present Shaft No. 2, with a view in time of driving through to, and opening out in the upper seam after sufficient safe distance has been driven from present flooded workings, which, probably only would be sanctioned by Inspector after safely securing present working shaft from danger of flooding.

Though, should the company be prepared to uphold the accuracy of their survey as to up-keep and safety left for support (that is, to thickness of pillars left exceeding 5 yards thick, and regularly driven, as shown on plan), also to non-existence of fallen areas as appears on the Government plans, I would then be of opinion that the workings would be safer and to better advantage stowed tight with waste in the manner as previously described, and kept free from standage water, thus permitting safety with great extent of margin for up-keep of overhead strata, which, under such circumstances is ample, that the future extended workings could be carried on seaward with perfect safety, which I insist upon; the fact obtained from the Government plans showing overhead of present lower level of those parts of the workings 211½ feet of measures.

I have, &c.,

The Shag Point Coal Company, Shag Point.

ROBT. B. DENNISTON.

K.—MR. DENNISTON'S SUPPLEMENTARY REPORT.

DEAR SIR,—

Referring to my remarks made in report to you on the submarine workings at Shag Point, bearing date August, 1883, in which the report reads, page 5, thus:—“If the Government plans are to be taken as the correct ~~state~~ (latest) of these workings, with such an extent of fallen area and also their pillars, then I am reluctantly compelled, with all prudence, to agree with the action taken by the Inspector.”—the meaning I intend by the clause so written to convey being that the Inspector, in his opinion, considering the workings unsafe, took upon himself (which probably is within his duties to do) to issue orders for the workmen to be withdrawn and abandon the