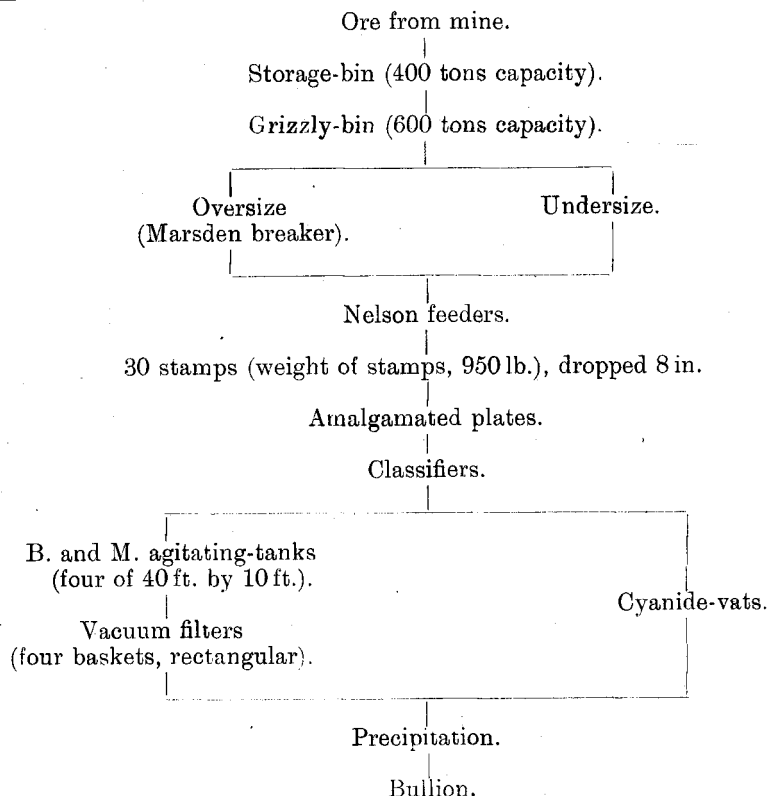


characteristics, and direction of strike. The reef being operated upon at Blackwater occurs as a lenticular fissure-vein of somewhat laminated quartz in highly inclined beds of phyllite, alternating with sandstone, all probably of Carboniferous age. The lenses of quartz vary considerably in dimensions, the maximum width observed by the writer during an inspection of the mine in September, 1908, being about 7 ft. The strike of the vein is north-north-east and south-south-west, dipping at a high angle to the west, the direction of strike being well maintained throughout the whole length operated upon viz., 2,100 ft. The gold-contents, which are frequently visible to the unaided eye, appear to occur in the small seams or laminations in the quartz parallel with the walls. The ore is free-milling and unrefractory. The mine is worked from a vertical winding-shaft in depth 457 ft., also from a connecting adit 430 ft. in length, driven out from the No. 2 or "Joker" level (310 ft.) to the slope of a hill facing the reduction-works. The workings above the No. 2 level (307 ft.) are drained from the Joker adit; below that the small quantity of water encountered is baled from the winding-shaft. The hoisting plant consists of a pair of non-condensing engines with cylinders 14 in. in diameter, having 28 in. stroke, the steam-pressure being 120 lb. These engines operate two coupled drums of 5 ft. 6 in. diameter, either of which can be run independently if desired. A considerable amount of development was carried out underground preparatory to the installation of the treatment plant. At the end of 1908 the following levels had been driven :—

	Depth from Surface. Ft.	Distance driven by Levels in the Vein.	
		N.N.E.	S.S.W.
No. 1 level	150	388	157
No. 2 or Joker level	307	2,090	500
No. 3 level	432	731	300

The reef has been proved for a continuous length of 2,090 ft. in the No. 2 and upper levels. The reduction-works are an excellent and up-to-date installation, founded on the most modern practice in this Dominion and elsewhere. The favourable configuration of the country, together with an ample water-supply, has been taken advantage of to the fullest extent. The ore is conveyed by horse tramway from the No. 2 (Joker) level adit to storage-bins situated at a considerable altitude above the grizzly-bins, these bins being connected by a self-acting inclined haulage-plane, upon which self-dumping skips of 5 tons capacity are employed. The mill consists of a 30-head installation, with stamps of 950 lb., which are dropped about 8 in., ninety beats per minute; the mortars discharge the pulp through woven steel-wire screens into launders, connecting the mill with the amalgamated copper plates, situated some distance away to avoid vibration. The whole of the motive power for the reduction-works is obtained by the utilisation of water-power from Snowy Creek, at an elevation of 120 ft. above the Pelton wheels, from which the power is conveyed to the various machines by rope gear. The following treatment-chart will illustrate the order of treatment of the ore when the works are quite completed :—



For the five months' work during 1908 £17,647 has been obtained as the result of treating 9,169 tons (of 2,240 lb.) by battery amalgamation and cyanidation.

Southern Inspection District.

Barewood Goldfield.—By the Proclamation, dated 18th March, 1909, bringing the whole of the Barewood Run, containing about 31,570 acres in the Taieri County, under "The Mining Act, 1908," this field will now receive that attention from prospectors which for many years has not been possible, owing to the fact that it formed part of a sheep-run situated on the Otago University Reserve, which was closed to mining, excepting only a small area of 2,719 acres comprising the Barewood Mining Reserve, upon which quartz-mining has been carried out in a more or less desultory manner for many