

GLOSSARY OF TERMS TO AID UNDERSTANDING OF THE OCCUPATIONS LISTED IN THE TIME AND WAGES LEDGERS

Reference: *Gold Mining at Waihi 1878-1952* by J B McARA, published 1978

Amalgamator	Added mercury to pulverised quartz in the process to recover gold.
Braceman	Employed at the brace where the cages were loaded and unloaded. He had to remove and tip the full trucks and replace them with empties as they arrived in the cage, and had to load men and materials going down the shaft.
Chamberman	The man in charge of the cages underground who attended to all underground loading. All the men were subject to his direction when travelling in the cages.
Cyanide foreman	Sodium cyanide, used principally as a solvent of gold and silver in the cyanidation process, in which ore, pulverised to minus-200-mesh-size was agitated in cyanide solution with compressed air for approximately 5 days. The pregnant cyanide solution was then drawn off by vacuum filtration and the gold and silver precipitated on zinc shavings, after which the solution was recirculated.
Elevators	The principal elevators were the huge wooden elevator-wheels (up to 35 ft in diameter) driven by large pinion gears. They were usually erected one above the other and over a long period proved to be the most practical and reliable method of handling the very abrasive pre pulp.
Flume	An aqueduct. Several of these were used to carry water-races over streams and gullies. There were two large arch-supported flumes across the Ohinemuri River carrying the 12ft by 4ft low-pressure race.
Hoppers	Storage bins for ore both on the surface and underground. The stamp hoppers held sufficient crushed ore for twenty-four hours' operation
Winding engineer	Generally shaft hoisting with the use of winding-engines, which was a highly sophisticated and specialised department of mining involving operation by a certified winding-engine driver under the control of the mine manager. The machines were regularly inspected by the mechanical engineer, the chief electrician and the rigger, who had to check and lubricate the winding ropes frequently.
Horses	They were sometimes used for underground haulage, a horse pulling six or eight trucks at a time. Horses were most useful where loading was done from hoppers, of dirt which had previously been handled and could therefore be loaded quickly.
Kilns	Before 1900 the ore was dried in kilns before crushing. Roughly a ton of wood per ton of ore was required for this purpose, the wood being loaded into the hot kilns in layers about five feet thick

	alternating with the ore, while the dried or calcified ore was drawn off from the bottom of the kilns continuously. Each kiln held 50-100 tons of ore. Attempts to treat the ore by other means failed and it was not until the advent of cyanidation, sand and slimes separation, and concentration of the sulphide minerals, that efficient wet crushing was developed. The quartz dust derived from dry crushing, in combination with the drying of the ore, resulted in many deaths from silicosis as the lethal nature of the dust was not realised at first.
Mullocker	One who removed the rock not rich enough for treatment. Mullocks referred to piles of this waste rock.
Oiler	A man engaged mainly in oiling and greasing. A full-time oiler was employed at the Waihi Mine oiling the rakes of trucks which plied back and forth from Waikino.
Shift boss	The underground foreman in charge of a section of the mine.
Stamps	The stamps pulverised the ore after it had passed through the crushers and been reduced to minus-two-and-a-half-inch size. They crushed it to a pulp, with water, until it passed through the 10-mesh (to the linear inch) screens on the mortar box. There were five stamps (each weighing 1250lbs) to a mortar box and they operated at 110 drops a minute from a height of 8 inches, crushing approximately 7 tons per 24-hour day. They were driven by a camshaft, tappets attached to the long stamp stems being lifted in a particular sequence and then the whole weight of the stamp allowed to fall on the ore. Wear of iron was approximately half a pound per ton of ore crushed; the shoes and dies were cast in the Waikino foundry.
Surveying	All new underground work was surveyed and entered on the mine plans. Walter Johnson was in charge of the survey office for some forty years, during which time a number of assistants worked under him.
Tanks	The original leaching vats at the Cassel cyanidation plant (the first of its kind in Waihi) had an internal diameter of 20 ft and were constructed of three-inch-thick heart-kauri slats held together with one-and-seven-eighths-inch-diameter encircling bolts. Later tanks were constructed of riveted steel plates, but the main sand vats in the tank shed at Waikino were huge square concrete structures.
Tally-clerk	He had control of weighing the ore and keeping the time worked, and was the main channel of communications between the surface and underground. First Aid supplies were kept in his office and the miners' identification numbers were also kept there.

Timberman	A man specially skilled in the repair and installation of mine timbers which secured the ground for safe working and as part of the means to gain access to the reefs.
Trucking	The loading of ore in the stopes into trucks and its transport to the shaft. Trucking was usually carried on in three shifts. The trucker often had to use explosives to break up large boulders blocking the passes or to bring the ore down when it hung up in the stope and became arched.
Vanners	The belt-vanner was a short, wide, inclined moving rubber belt on which the pulverised ore was washed by a counter-flow of water to separate the concentrates, washing away the lighter material and leaving the heavy sulphides to be discharged at the top end. At one stage there were 28 vanners in use in the vanner shed at Waikino.
Winding-engine	The engine installed at each shaft to raise and lower men and materials to the various levels of the mine. Since the lives of miners depended on these winders they had to be of a high standard and the drivers had to be certificated.