

# THE BENDIGO BATTERY: THE LAST WAIORONGOMAI BATTERY

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## THE BENDIGO BATTERY: THE LAST WAIORONGOMAI BATTERY

**Abstract:** *The Bendigo Battery was erected to treat ore from the mine of the same name, which was worked on a small scale, with the usual reportedly encouraging prospects, during the early twentieth century. Its site had been selected for a batter in previous decades but never used. The Bendigo Company was, as usual, under-capitalized, but some of its shareholders had experience of mining and must have optimistically expected successful share trading if not mining. But it struggled to obtain calls and meet its debts.*

*The company's small-scale mining was sufficiently encouraging for it to commence work on its battery in 1909. Progress was very slow, handicapped by legal squabbles, and it did not commence operations until late 1911. Full details are provided of the machinery and processes used. It quickly proved to be unprofitable and was abandoned in 1913, for which the poverty of the ore rather than the treatment process was most to blame.*

*From 1914 onwards, others took over the ground, doing some more prospecting and modifying the treatment, notably by introducing the oil flotation process. After the late 1920s it was no longer used, although its last owner still hoped to make more improvements. After he died, the machinery was stolen.*

### BEFORE THE BENDIGO COMPANY WAS FORMED

When the Bendigo battery opened in 1911, the *Te Aroha News* provided background information about the Bendigo mine:

The claim now being worked by the Bendigo Company was included in the discoveries of the Native, Hone Werahiko,<sup>1</sup> the year of 1882 being the date of its find. It subsequently became known as the Cadman mine, that appellation being bestowed on it after the name of the Hon. A.J. Cadman, then Minister of Mines and M.P. for the electorate. On and off the reef has been worked, mostly on the surface, from the time of its discovery with varying success, but operations ceased some five years ago.

Mr T[homas] Gavin<sup>2</sup> stepped in and pegged out the claim and some two years later with the co-operation of Mr Charles Manuel<sup>3</sup>

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<sup>1</sup> See paper on his life.

<sup>2</sup> See paper on his life.

handed it over to its present owners, the Bendigo Gold-mining Company. Mr Manuel (who was a member of the Piako County Council) is the Chairman of Directors of the Company and Mr Gavin acts as mine manager.<sup>4</sup>

The Bendigo mine was part of the former Cadman claim, and the company also acquired the Sceptre, which adjoined its upper boundary. The main Waiorongomai lode traversed the latter claim, but as its ore was unpayable the reefs developed from 1882 onwards were (in sequence as struck by the crosscut) the Silver King, Waitoki, and Werahiko.<sup>5</sup> The Cadman in the 1890s comprised the former Werahiko, Silver King, and Waitoki claims.<sup>6</sup> In July 1901, Gavin, then the leading mine manager in the district, was granted 30 acres of the Cadman, 'which at one time had a good name'.<sup>7</sup> Within two months, he sought permission to reduce the number of men working it from five to two, for six months.<sup>8</sup> The following February, he applied for the Sceptre, and three months later was permitted to work the two claims jointly for six months with fewer men than required.<sup>9</sup> At the end of May, he obtained 13oz 15dwt of melted gold from the Cadman.<sup>10</sup> Ore was sent to London for treating by a new but unspecified process, and five tons from a newly discovered lode was tested at Thames.<sup>11</sup> He surrendered, re-

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<sup>3</sup> See paper on his life.

<sup>4</sup> *Te Aroha News*, 31 August 1911, p. 3.

<sup>5</sup> For plans of these claims and lodes, see 'Plan of Water Race, Aroha Gold Mines Ltd' (October 1896), Te Aroha Museum; G.E. Harris, 'Map of Te Aroha Mining Area (Based on an old map in the Warden's Office, Te Aroha) Showing Claims, Reefs, &c' (1912), appended to John Henderson, assisted by J.A. Bartrum, *The Geology of the Aroha Subdivision, Hauraki, New Zealand: Geological Survey Bulletin No. 16 (New Series)* (Wellington, 1913); map of Waiorongomai field, n.d. [1880s?], with details added in 1930s by Waiorongomai Gold Mines, in private possession.

<sup>6</sup> H.A. Gordon to Minister of Mines, 17 June 1896, *AJHR*, 1896, C-3, p. 78.

<sup>7</sup> Te Aroha Warden's Court, Mining Applications 1901, 20/1901, BBAV 11289/16a, ANZ-A; *Thames Star*, 2 August 1901, p. 2.

<sup>8</sup> Te Aroha Warden's Court, Mining Applications 1901, 75/1901, BBAV 11289/16a, ANZ-A.

<sup>9</sup> Te Aroha Warden's Court, Mining Applications 1902, 1, 23, 24/1902, BBAV 11289/17a, ANZ-A.

<sup>10</sup> Bank of New Zealand, Thames Branch, Gold Purchase Register 1899-1932, entry for 31 May 1902, Bank of New Zealand Archives, Wellington.

<sup>11</sup> Te Aroha Warden's Court, Mining Applications 1902, 23/1902, BBAV 11289/17a, ANZ-A.

acquired, and then surrendered the Sceptre during 1903 and 1904, all the time hoping to form a company.<sup>12</sup> By mid-1905, Gavin and his 'small party' had obtained 'fair results'.<sup>13</sup> In late August, ten feet was driven north on the Werahiko reef, which was two feet wide but 'of little value'. In contrast, the Silver King reef was six feet wide, containing 'nice looking ore, with a fair amount of sulphide and a little gold showing. The sample assays from the winze are valued at £17 13s 7d and £1 2s 8d. No gold could be got by pounding or [using] machinery in any of the samples, and the ordinary amalgamation treatment would be of no use for this ore'.<sup>14</sup> An old drive was being cleared out and re-timbered in readiness for driving on this lode.<sup>15</sup>

In January 1905, Gavin was one of six vendors of the Cadman Company, which ceased work in August for want of funds, and the following year he was granted both the Cadman and Sceptre claims.<sup>16</sup> Later in 1906, when applying to work both with two men for six months, he declared that he was 'thoroughly prospecting' the Cadman and was attempting to raise capital.<sup>17</sup> In September 1907, when successfully asking yet again for six months' protection for both claims while he formed a company, he declared that, as the ores were refractory, it was 'impossible to do more at present than prospecting and preparatory works'.<sup>18</sup> In July 1908, when a local farmer unsuccessfully sought their forfeiture for not being worked, Gavin was granted another six weeks to prospect and test the reefs.<sup>19</sup>

The site on which the Bendigo battery was erected had been seen as suitable for this purpose from the early days. A survey of January 1884 showed the Excelsior Battery Site at this location.<sup>20</sup> During that month, it was cleared and tenders were called to construct a water race to it.<sup>21</sup> The

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<sup>12</sup> Te Aroha Warden's Court, Mining Applications 1903, 1, 106/1903, BBAV 11289/17a; Mining Applications 1904, 33, 41/1904, BBAV 11289/18a, ANZ-A.

<sup>13</sup> Warden to Under-Secretary, Mines Department, 5 May 1905, *AJHR*, 1905, C-3, p. 86.

<sup>14</sup> *Thames Star*, 25 August 1905, p. 1.

<sup>15</sup> *Thames Star*, 2 September 1905, p. 1.

<sup>16</sup> Company Files, BADZ 5181, box 132 no. 849; Te Aroha Warden's Court, Mining Applications 1906, 2, 3/1906, BBAV 11289/18a, ANZ-A.

<sup>17</sup> Te Aroha Warden's Court, Mining Applications 1906, 24, 25/1906, BBAV 11289/18a, ANZ-A.

<sup>18</sup> Te Aroha Warden's Court, Mining Applications 1907, 27/1907, BBAV 1289/19a, ANZ-A.

<sup>19</sup> Te Aroha Warden's Court, Plaints 1908, 3/1908, BBAV 11572/3a, ANZ-A.

<sup>20</sup> G.H.A. Purchas, Plan of 'Te Aroha Goldfield' (January 1884), Hamilton Public Library.

<sup>21</sup> *Thames Advertiser*, 11 January 1884, p. 2; *Te Aroha News*, 12 January 1884, p. 7.

Excelsior Battery Company, formed the following month, prepared plans for a 20-head stamper battery plus water race, but failed to raise the necessary capital.<sup>22</sup> When Gavin applied for the Cadman in 1901, he sought this two-acre site for a crushing and reduction plant, along with a 50-chain water race, but quickly withdrew these applications.<sup>23</sup> Not till the company was formed was the battery constructed.

#### AN UNDER-CAPITALISED COMPANY

The Bendigo Company was incorporated on 27 March 1908, four days after seven men, all but one being residents of Auckland, had applied to register it. Charles Manuel, then farming at Morrinsville, had 1,000 shares. Arthur Wright, a merchant tailor who by 1902 had invested in up to 70 mining companies and been a director of many,<sup>24</sup> had 500 shares. Dennis Gilmore MacDonnell, a leading mining company secretary and investor in the latter years of the nineteenth century,<sup>25</sup> had the same number. A leading Auckland businessmen and kauri gum merchant, William Spencer Whitley,<sup>26</sup> had 1,000, as had John Albert Endean, a chemist who had trained as an assayer at the Thames School of Mines.<sup>27</sup> The latter's father, John, a hotelkeeper, had 2,000,<sup>28</sup> the same number as Wenzl Schollum,<sup>29</sup> a land and commission agent.<sup>30</sup> Wright was chairman of directors until Manuel replaced him in mid-1911.<sup>31</sup>

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<sup>22</sup> *Thames Advertiser*, 28 February 1884, p. 3; *Auckland Weekly News*, 1 March 1884, p. 19; *Te Aroha News*, 1 March 1884, p. 7, 8 March 1884, p. 2, 29 March 1884, p. 2, 5 April 1884, p. 2, 3 May 1884, p. 2.

<sup>23</sup> *Te Aroha Warden's Court*, Mining Applications 1901, 61, 62/1901, BBAV 11289/16a, ANZ-A.

<sup>24</sup> See *Cyclopedia of New Zealand*, vol. 2, pp. 355, 512.

<sup>25</sup> See *Cyclopedia of New Zealand*, vol. 2, pp. 464-465; *Thames Star*, 2 November 1908, p. 2; *New Zealand Herald*, 2 November 1908, p. 4, 4 November 1931, p. 14.

<sup>26</sup> See *Cyclopedia of New Zealand*, vol. 2, p. 394.

<sup>27</sup> See *Cyclopedia of New Zealand*, vol. 2, p. 162.

<sup>28</sup> For the lives of John and John Albert Endean, see paper on Charles Manuel.

<sup>29</sup> See advertisement, *Auckland Star*, 13 November 1908, p. 6; advertisement, *New Zealand Herald*, 27 December 1945, p. 10; Probate, BBAE 1570, P97/1959, ANZ-A.

<sup>30</sup> Application to form a company, 23 March 1908, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>31</sup> Directors' Reports, 1909-1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

On 21 July, all the original subscribers apart from Schollum and the younger Endean informed the Companies Office that they were the directors and had sufficient capital to start work. The nominal capital was £10,000 in 100,000 shares of 2s each; 43,050 had been allotted, 30,000 of these as paid-up to 6d.<sup>32</sup> The first allocation of shares had been on 27 March, when these 43,050, with a nominal value of £4,305, were allotted to ten residents of Auckland, ten of Thames, two of Morrinsville (one being Manuel's unmarried daughter), and one, to the only miner, of Mackaytown. One of the Aucklanders was Schollum, who acquired another 2,000 shares. As well as these shareholders already listed, there were two clerks, one of whom worked for Schollum, two grocers, two drapers (one of them a woman), three builders, four hotelkeepers, and one each of contractor, baker, farmer, accountant, restaurant owner, cab proprietor, and agent.<sup>33</sup> None were known to be experienced investors, apart from Schollum and the agent.

On 10 September, 26,950 shares were allotted to nine residents of Te Aroha, two of Thames, four of Auckland, and one of both Tirau and Hamilton. Only one of the new shareholders was a miner: William Morris Newsham,<sup>34</sup> of Te Aroha, with 2,000 shares. There were three hotelkeepers: one at Te Aroha, Ralph Lake Somers,<sup>35</sup> one at Waihou, Oswald Francis Pilling,<sup>36</sup> and one at Tirau, Samuel Leonard Bygrave, who had previously lived in Te Aroha.<sup>37</sup> The other Te Aroha residents were a draper, a storekeeper, a butcher, a farmer, and Gavin. Gavin's purchase of another 2,000 shares, along with his brother William, a carpenter living in Auckland, taking up 250, indicated his expectation that the mine would succeed. The Thames shareholders comprised a newspaper proprietor and mining investor who had been involved in mining since the early days of the Thames goldfield, William McCullough,<sup>38</sup> and H. Gibbons Gillespie, an

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<sup>32</sup> Declaration by Arthur Wright, John Endean, W.S. Whitley, D.G. MacDonnell, and Charles Manuel, 21 July 1908, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>33</sup> Return of Allotments, 27 March 1908, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>34</sup> See paper on his life.

<sup>35</sup> See *Te Aroha News*, 2 October 1923, p. 1, 22 July 1936, p. 1, 1 December 1944, p. 5.

<sup>36</sup> See *Cyclopedia of New Zealand*, vol. 2, p. 823.

<sup>37</sup> See *Cyclopedia of New Zealand*, vol. 2, p. 829.

<sup>38</sup> See *Ohinemuri Gazette*, 22 October 1892, p. 3; *Observer*, 31 October 1896, p. 19, 30 December 1899, p. 9; *Cyclopedia of New Zealand*, vol. 2, p. 96.

accountant, timber merchant, general agent, and sharebroker.<sup>39</sup> The other Auckland shareholders were a commercial traveller, a commission agent, and a sharebroker. The Hamilton shareholder, George Edgecumbe, formerly a newspaper owner but now a land agent,<sup>40</sup> had invested in other mining ventures, as had most or all of the other shareholders.<sup>41</sup> This again indicated their confidence in the prospects; they were not ‘innocents abroad’ but experienced investors who expected either to make money from the mine’s output or through trading in shares. In comparison, many later shareholders could be regarded as being inexperienced in the ways of mining and of mining companies.

On 10 September, Gavin sold the Cadman and Sceptre to the company for £673 15s, paid for in 26,950 shares paid-up to 6d, a quarter of their value.<sup>42</sup> These claims covered 30 acres.<sup>43</sup> Prospecting the former, which was renamed the Bendigo, during the first nine months cost £873, being most of the company’s funds, for although its nominal capital was £10,000, only £1,075 was paid up, which was less than the scrip shares worth £1,424 issued to the vendors.<sup>44</sup> By May 1909, there were 93 shareholders; 12 others had sold their interests. The shareholders, past and present, were scattered between Taneatua in the Bay of Plenty, where there was one, to Auckland, where there were 28. Thames had 18, Morrinsville had 17, Te Aroha had 12, Waihi and Karangahake both had 11, Mackaytown and Piako two each, and the remainder (Paeroa, Waikino, Hamilton, and Tirau) having one each. There were 14 miners, ten women (only one of whom, a fruiterer, had her own income), nine farmers, eight hotelkeepers, and six sharebrokers,

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<sup>39</sup> For his earlier life, see *Cyclopedia of New Zealand*, vol. 2, pp. 892-893.

<sup>40</sup> See *Cyclopedia of New Zealand*, vol. 2, pp. 740, 745; *Waikato Argus*, 11 July 1896, p. 6; *Observer*, 13 May 1905, p. 4; *New Zealand Herald*, 12 March 1930, p. 14.

<sup>41</sup> List of Shares Allotted 10th September 1908, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>42</sup> Memorandum of Agreement between Thomas Gavin and Bendigo Gold Mining Company, 10 September 1908, Company Files, BADZ 5181, box 226 no. 1332; Te Aroha Warden’s Court, Mining Applications 1908, 24/1908, BBAV 11289/19a, ANZ-A.

<sup>43</sup> Transfer of Bendigo Company property to Percy Spencer, 28 February 1914, Te Aroha Warden’s Court, Registrations 1914, no. 2268, BCDG 11288/5a, ANZ-A.

<sup>44</sup> *AJHR*, 1909, C-3, p. 90.

the remainder having a wide variety of occupations, but few with any prior experience with mining. Gavin was the only one mine manager.<sup>45</sup>

On 27 May, Manuel, along with two Karangahake miners and another one who lived at Mackaytown, sold the Rahu and Crown Nimrod claims near Karangahake to the company for 30,000 shares, paid for in 30,000 shares paid-up to 6d.<sup>46</sup> But having bought these properties, the company did nothing with them.

To fund the erection of a battery, the nominal capital was increased in August 1909 by £5,000.<sup>47</sup> On 3 November, 77 new or existing shareholders were allotted interests, the furthest from Te Aroha being one each at Rotorua and Gisborne and three in Wellington. There was a wide range of occupations but only three miners; the largest category was sharebrokers, who intended to sell their interests. The secretary and his wife, who was a sharebroker, both held shares; they expected the company to succeed, retaining their interests until it was liquidated. Manuel's wife, daughter, and two of his sons also acquired shares.<sup>48</sup> By early 1910, there were 147 shareholders, who had paid 7d and then 1d on each share. £2,373 of the £2,775 subscribed by that date had been spent, and there was a debt of £21.<sup>49</sup> By May 1910, another 65 people had taken up shares; seven were miners, six were sharebrokers, but the largest category was ten women, including John Endean's wife, another indication of the directors' optimism. Auckland provided 22, Te Aroha seven, and Gisborne 11; perhaps a broker had targeted the latter city.<sup>50</sup> By the end of 1910, £14,396 had been subscribed and there were 160 shareholders.<sup>51</sup> No more ore had been

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<sup>45</sup> Return of Shares held on 12 May 1909, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>46</sup> Return of Allotments, 27 May 1908, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>47</sup> Memorandum of 12 August 1909, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A; *Auckland Weekly News*, 12 August 1909, p. 36.

<sup>48</sup> List of Shares Allotted on 3 November 1909; List of Persons holding Shares, 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>49</sup> *AJHR*, 1910, C-3, p. 73.

<sup>50</sup> Summary of Capital and Shares, 11 May 1910, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>51</sup> Warden to Under-Secretary, Mines Department, [no date] April 1911, *AJHR*, 1911, C-3, p. 41.

crushed, and of the £5,674 paid-up so far, £5,507 had been spent, with £373 debts being owed, and £470 arrears of calls still outstanding.<sup>52</sup>

In August 1911, it was reported that the company's capital had been increased to 150,000 shares valued at 2s, a 'large proportion' of which had been subscribed in the district.<sup>53</sup> There were in fact only 22 shareholders resident in Te Aroha in May, owning 17,890 of the 143,958 shares allotted on 11 May that year. Three residents of Waiorongomai held a total of 525 shares; four Te Aroha residents had sold their interests. By that date, another 40 people had taken up shares, including five miners.<sup>54</sup> That month, a local newspaper noted that shares, 'so long unquoted on the Auckland exchange, have made their appearance with a distinct upward tendency' because of high hopes for the battery process.<sup>55</sup> Auckland buyers offered 5 1/2d per share in April 1910 but only 1d by December.<sup>56</sup> More calls were made during the following two years, and £10,453 had been paid-up by the end of 1912. The amount spent since registration was £6,402, with £1,146 of debts still to be paid and arrears of calls being £344.<sup>57</sup> Despite the lack of success by 1912, by the end of May that year another 26 people had become shareholders, including four miners, three living at Waiorongomai. The largest category, six, was sharebroker.<sup>58</sup>

Shareholders had been warned that non-payment of calls meant shares would be forfeited,<sup>59</sup> a threat made by all companies. Calls were made for small amounts only: for example, the sixth one, in April 1911, was for 1d per share, and the eighth, in October that year, was for 2d.<sup>60</sup> The next call,

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<sup>52</sup> *AJHR*, 1911, C-3, p. 69.

<sup>53</sup> *Te Aroha News*, 31 August 1911, p. 3.

<sup>54</sup> Summary of Capital and Shares, 11 May 1911, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>55</sup> Editorial, *Te Aroha Mail*, 2 May 1911, p. 2.

<sup>56</sup> *Auckland Weekly News*, 10 March 1910, p. 37, 17 March 1910, p. 37, 24 March 1910, p. 37, 7 April 1910, p. 37, 5 May 1910, p. 37, 19 May 1910, p. 37, 2 June 1910, p. 37, 30 June 1910, p. 37, 7 July 1910, p. 31, 14 July 1910, p. 37, 21 July 1910, p. 37, 4 August 1910, p. 37, 11 August 1910, p. 37, 18 August 1910, p. 37, 24 November 1910, p. 37, 8 December 1910, p. 37, 22 December 1910, p. 37.

<sup>57</sup> *AJHR*, 1912, C-2, p. 84, 1913, C-2, p. 64.

<sup>58</sup> List of Persons holding Shares on 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>59</sup> *Observer*, 27 August 1910, p. 20, 18 February 1911, p. 20.

<sup>60</sup> *Observer*, 15 April 1911, p. 20, 14 October 1911, p. 10.

the ninth, made in February the following year, was also for 2d.<sup>61</sup> In April 1912, Manuel, the managing director, told the warden that about £8,000 had been spent during the past two years. 'We are a local company working on calls & it is impossible to get more calls in'. He claimed that the Waihi miners' strike had 'caused it to be impossible to get in calls'.<sup>62</sup> The last call, after the company went into liquidation and was trying to clear its debts, was for 6d.<sup>63</sup>

The company struggled to pay its debts. For example, a Thames foundry, which had provided its machinery, had to request payment repeatedly. In May 1911, it claimed to be 'surprised that we are still without payment' for £4 12s 3d owed by the contractor erecting the battery and for £1 12s owed by the company.<sup>64</sup> In July the following year, £7 8s 8d was 'considerably overdue', and three months later the foundry was still awaiting payment.<sup>65</sup> In June 1914, the debt of £5 11s 6d was 'considerably overdue', and one month later the firm wrote that it would 'now be glad to have payment of the above amount'.<sup>66</sup>

The company was similarly lax in paying rent due on its licenses. In January 1912, it was sued for £50 12s 6d owing on its two claims and £14 10s owing on its water race and special site to December 1910.<sup>67</sup> Not till July the following year was the rent owing for the claims paid.<sup>68</sup> Some debts

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<sup>61</sup> *Observer*, 10 February 1912, p. 20.

<sup>62</sup> Te Aroha Warden's Court, Mining Applications 1912, 61/1912, BBAV 11289/21a, ANZ-A.

<sup>63</sup> C.A. Stubbs to Receiver of Gold Revenue, 20 June 1913, Te Aroha Warden's Court, Register of Licensed Holdings 1887-1909, folio 181, BBAV 11500/8b, ANZ-A.

<sup>64</sup> A. & G. Price to John Law, 15 May 1911, Letterbook 1910-1911, p. 525, A. & G. Price Archives, Thames.

<sup>65</sup> A. & G. Price to Bendigo Gold Mining Company, 25 July 1912, 23 October 1912, Letterbook 1911-1913, pp. 439, 602, A. & G. Price Archives, Thames.

<sup>66</sup> A. & G. Price to C.A. Stubbs (Secretary, Bendigo Gold Mining Company), 2 June 1914, 2 July 1914, Letterbook 1914-1915, pp. 191, 300, A. & G. Price Archives, Thames.

<sup>67</sup> Te Aroha Warden's Court, Plaints 1912, 1, 2/1912, BBAV 11289/21a, ANZ-A.

<sup>68</sup> C.A. Stubbs (Liquidator, Bendigo Gold Mining Company) to Receiver of Gold Revenue, 9 July 1913, Te Aroha Warden's Court, Mining Applications 1913, BBAV 11289/22a, ANZ-A.

remained after it had been agreed to wind up the company.<sup>69</sup> To meet its remaining liabilities and realize assets, a final call of 6d was made.<sup>70</sup>

### MINING BEFORE THE BATTERY COMMENCED

Late in August 1908, when Gavin was granted six months' protection for the Cadman and Sceptre, he stated that he would work both with two men, prospecting, sampling, and testing ore.<sup>71</sup> In practice, he only worked that portion of the Cadman renamed the Bendigo. In late September, the *Te Aroha News* reported on his work since being appointed mine manager.

He has been very busy cleaning out and timbering the Level leading into Silver King Reef. This Reef has been opened up for a length of about 250ft and carries good values all the distance. Mr Gavin has several tons of ore broken out and paddocked, which is of a high grade ore and gold can be freely got by dish and mortar test, there is also a quantity of sulphide ore where you cannot get the free gold by washing, but which assays anything from £12 to £50 per ton. It is the intention of this Company to break out about 20 to 30 loads of this ore and get it treated at Waiorongomai battery or at some other place that might be more suited to the treatment of the ore.

Since Mr Gavin has had charge he has been testing this Reef on the outcrop in several places and finds that the Reef carries free gold for a length of over 1000ft on the outcrop. There are also several other Reefs on the property and most of them carrying good values. Taking all things into consideration the Bendigo Mine will prove to be a valuable property.<sup>72</sup>

When Matthew Paul, the mining inspector, visited in October, he commented that 'the Bendigo property had unusual prospects, and was well spoken of'.<sup>73</sup> In late November, Gavin had 'a very large parcel of ore broken out from the Silver King reef, and ready for treatment'. He had shifted the miners to the previously unworked Werahiko reef, about 12 feet wide and 'about 500ft east of the Silver King reef', comprising 'very similar' ore

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<sup>69</sup> Te Aroha Warden's Court, Mining Registrations 1914, no. 2268, BCDG 11228/5a, ANZ-A.

<sup>70</sup> C.A. Stubbs to Receiver of Gold Revenue, 20 June 1913, Te Aroha Warden's Court, Register of Licensed Holdings 1887-1909, folio 181, BBAV 11500/8b, ANZ-A.

<sup>71</sup> Te Aroha Warden's Court, Mining Applications 1908, 24/1908, BBAV 11289/19a, ANZ-A.

<sup>72</sup> *Te Aroha News*, 24 September 1908, p. 2.

<sup>73</sup> *Te Aroha News*, 24 October 1908, p. 2.

showing gold ‘distributed through the quartz when breaking down’.<sup>74</sup> By early December, five tons from the Silver King lode were bagged ready for treating at Thames, and Gavin was testing other reefs. He had driven about ten feet on the hanging wall of a lode 100 feet in from the Silver King reef; two feet wide, it ‘prospects well’. He had also cut through the 18-foot wide Werahiko reef, containing ‘good sulphide ore’ and free gold similar to the Silver King, and planned to drive south on it.<sup>75</sup> The five tons produced the satisfactory result of 14oz of gold, worth £17 10s.<sup>76</sup>

In the company’s first nine months, four men were employed, principally on the Silver King reef.<sup>77</sup> This was eight feet wide, and, as the footwall assayed £3 19s 1d per ton, Gavin considered the prospects ‘encouraging’.<sup>78</sup> This good sulphide ore was on the western portion of the ground.<sup>79</sup> In the following 12 months, five men did ‘vigorous prospecting of a very encouraging nature’.<sup>80</sup> In July 1909, Gavin was driving north on the Silver King, now nine feet wide. ‘The ore broken showed a great improvement, there being considerably more sulphide showing, with a very rich seam on the footwall’.<sup>81</sup> ‘Fully 200 tons’ was ‘stacked ready for treatment. A rib of quartz, about 3ft wide, has been discovered. It is making right into a large body of ore over 20ft in width, known as the Moa reef’.<sup>82</sup> Driving southerly eight feet on the Silver King reef produced ‘rich sulphide ore. One assay went as high as £60 per ton’. The ‘cross lode’ heading for the Moa was ‘about 3ft in width, and gold can be easily seen in the stone. When this junctions with the Moa lode, which is 30ft in width, the manager hopes to get something good’.<sup>83</sup> Almost two months later, the Silver King ore was

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<sup>74</sup> *Thames Star*, 27 November 1908, p. 1.

<sup>75</sup> *Te Aroha News*, 12 December 1908, p. 3.

<sup>76</sup> Matthew Paul to Under-Secretary, Mines Department, 31 March 1910, *AJHR*, 1910, C-3, p. 18.

<sup>77</sup> For plan showing the adit and the lode, see Waiorongomai Gold Mining Company’s map of the Waiorongomai mines, n.d. [1880s, modified in 1930s], in private possession.

<sup>78</sup> Boyd Bennie (Inspector of Mines) to Under-Secretary, Mines Department, 31 March 1909, *AJHR*, 1909, C-3, p. 25.

<sup>79</sup> *Auckland Weekly News*, 28 January 1909, p. 49.

<sup>80</sup> Warden to Under-Secretary, Mines Department, 20 May 1910, *AJHR*, 1910, C-3, p. 40.

<sup>81</sup> *Te Aroha News*, 15 July 1909, p. 2.

<sup>82</sup> *Thames Star*, 1 July 1909, p. 1.

<sup>83</sup> *Thames Star*, 9 July 1909, p. 1.

‘of high grade, more especially on the footwall side, where gold is showing’.<sup>84</sup> This rich band of ore increased in size to two feet, and was expected to become as wide as the drive. Gavin hoped that the directors would ‘lose no time in getting the Battery erected, as we have such a large tonnage of ore awaiting treatment’.<sup>85</sup> In October, there was more driving through ‘small quartz veins’ and stoping commenced.<sup>86</sup> In mid-November, Gavin was driving on the southern end of the Silver King reef, which was ‘fully 10ft wide and carrying good payable ore’.<sup>87</sup>

In January 1910, two men were working in the leading stope, whose face was within ten feet of the end of the drive. Although the ore looked good, it was full of sulphides. ‘The other men are engaged putting in studs along the level, so as to make ready for another stope’.<sup>88</sup> In mid-March, tenders were called to drive 100 feet.<sup>89</sup> Two miners were stoping out ore from a reef now 12 feet wide, and others putting in a new level had driven 60 feet in ‘very good country’.<sup>90</sup> At the end of the month, Paul reported that work had been ‘principally confined to surface prospecting on several reefs outcropping on this claim, with satisfactory results. Owing to lack of capital, the owners have been unable to fully develop these lodes’. The drive on the Silver King had been extended by 100 feet ‘and a leading stope carried along’.<sup>91</sup>

During late April, driving on the reef continued. ‘The contractors in [the] low level have driven another 26ft in good country, and should finish their contract next week’.<sup>92</sup> By early June, it had been driven 80 feet. ‘The country rock is lighter in colour, and full of minerals, with small quartz stringers’. Gavin was still stoping out ore from the Silver King.<sup>93</sup> At the beginning of July, the contractors driving the low level reported that they

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<sup>84</sup> *Te Aroha News*, 4 September 1909, p. 3.

<sup>85</sup> *Te Aroha News*, 9 September 1909, p. 2.

<sup>86</sup> *Te Aroha News*, 7 October 1909, p. 3, 16 October 1909, p. 3, 20 November 1909, p. 3; *Thames Star*, 7 October 1909, p. 1, 18 October 1909, p. 1.

<sup>87</sup> *Thames Star*, 15 November 1909, p. 1.

<sup>88</sup> *Te Aroha News*, 22 January 1910, p. 3.

<sup>89</sup> *Te Aroha Mail*, 17 March 1910, p. 2.

<sup>90</sup> *Te Aroha News*, 19 March 1910, p. 2.

<sup>91</sup> Matthew Paul (Inspector of Mines) to Under-Secretary, Mines Department, 31 March 1910, *AJHR*, 1910, C-3, p. 18.

<sup>92</sup> *Te Aroha News*, 26 April 1910, p. 2.

<sup>93</sup> *Te Aroha News*, 11 June 1910, p. 2.

had driven '15ft in a good class of country and as there is a strong flow of water in the face the management expects to soon cut the reef'.<sup>94</sup> One week later, they struck it, exposing similar ore to the top level. 'From the amount of water coming from the reef, Gavin was 'of opinion that the reef will be very large, and he hopes to be able to report its size and value shortly. The stopes on the upper level are still producing good payable ore'.<sup>95</sup> By September, a large amount of ore was paddocked awaiting the completion of the battery.<sup>96</sup>

In February 1911, the *Te Aroha News* reported that the Silver King lode had 'melting ore of good grade for a width of about ten feet. All ore from the different faces as development proceeds is being stacked at the mouth of the workings'.<sup>97</sup> Eight men had broken out 2,000 tons.<sup>98</sup> In March, Paul reported an average of four miners having worked during the past 12 months, 'principally driving and getting ready for stoping on the Silver King lode', which averaged eight feet in width. 1,000 tons had been 'broken out and stacked at the mouth of the level', awaiting the completion of the tramway to the mine.<sup>99</sup> The following month, another miner was employed.<sup>100</sup> As well as the aerial tramway from near the foot of Butler's Incline, the tramway from the top of it 'known as "Cadman's Extension" ' was the property of the company.<sup>101</sup>

Nearly two months after the battery started crushing, 'several Auckland and Waihi mining men' inspected the mine. 'A large amount of good looking ore is showing and the Bendigo should turn out an important claim'.<sup>102</sup> But profitability depended on the value of this ore and on the battery process used.

## CONSTRUCTING THE BATTERY

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<sup>94</sup> *Te Aroha Mail*, 2 July 1910, reprinted in *Te Aroha News*, 10 July 1935, p. 5.

<sup>95</sup> *Te Aroha News*, 9 July 1910, p. 2.

<sup>96</sup> *Te Aroha Mail*, 10 September 1910, p. 2.

<sup>97</sup> *Te Aroha News*, 7 February 1911, p. 2.

<sup>98</sup> *Te Aroha Warden's Court*, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

<sup>99</sup> Matthew Paul to Under-Secretary, Mines Department, 31 March 1911, *AJHR*, 1911, C-3, p. 22.

<sup>100</sup> *Te Aroha News*, 8 April 1911, p. 2.

<sup>101</sup> Transfer of Bendigo Company property to Percy Spencer, 28 February 1914, *Te Aroha Warden's Court*, Registrations 1914, no. 2268, BCDG 11288/5a, ANZ-A.

<sup>102</sup> *Waihi Daily Telegraph*, n.d., reprinted in *Te Aroha News*, 28 October 1911, p. 2.

A son of John Samuel Hill, from 1909 until 1915 the tramway manager,<sup>103</sup> understood that the battery was erected because Edwin Henry Hardy, the last significant mine owner at Waiorongomai,<sup>104</sup> held the rights to the existing one. As Hardy was ‘in financial difficulties’, the company were unable to reach an agreement with him, and decided to treat the ore themselves.<sup>105</sup>

In July 1909, the company applied for a water race of 50 chains, from the junction of Diamond Gully Stream and the Waiorongomai Stream,<sup>106</sup> which would provide ten sluice-heads of power. It was expected to take six months to build, for £500.<sup>107</sup> In August, when the application was first heard, the local newspaper reported that the ‘extortionate charge of £10 for first head and £1 for every additional head made by the High School Board, was taken exception to, and the Board is being approached for a reduction’.<sup>108</sup> After Manuel approached the board, they reduced the rent to £12 per annum for both water race and machine site.<sup>109</sup> The machine site, four acres and two roods beside the Waiorongomai Stream and directly below the tramway and the lower track, was granted on 24 August 1909.<sup>110</sup>

In August 1909, the company increased its capital to enable it to purchase the Hauraki Fortuna Battery at Hape Creek, Thames.<sup>111</sup> The *Te*

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<sup>103</sup> See paper on the Piako County tramway at Waiorongomai.

<sup>104</sup> See paper on his life.

<sup>105</sup> Les Hill, interviewed by David Bettison, July 1975.

<sup>106</sup> For plan of this water race, see Te Aroha Warden’s Court, Mining Applications 1909, 115/1909, BBAV 11289/20a, ANZ-A.

<sup>107</sup> Te Aroha Warden’s Court, Mining Applications 1909, 115/1909, BBAV 11289/20a, ANZ-A.

<sup>108</sup> Warden’s Court, *Te Aroha News*, 26 August 1909, p. 3.

<sup>109</sup> Thames High School Board of Governors, Minutes of Meetings of 4 August 1909, 7 September 1909, High School Archives, Thames; Secretary, Thames High School Board of Governors, to Under-Secretary, Mines Department, 8 September 1909, Mines Department, MD 1, 6/61, ANZ-W; Te Aroha Warden’s Court, Register of Mining Privileges 1894-1910, folios 163, 168, BBAV 11500/2a, ANZ-A; Warden’s Court, *Te Aroha News*, 28 October 1909, p. 2.

<sup>110</sup> Transfer of Bendigo Company property to Percy Spencer, 28 February 1914, Te Aroha Warden’s Court, Registrations 1914, no. 2268, BCDG 11288/5a, ANZ-A.

<sup>111</sup> *Auckland Weekly News*, 12 August 1909, p. 36; Te Aroha Warden’s Court, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

*Aroha News* optimistically 'expected that before long the noise of the stampers will be heard in the vicinity of the Bendigo Mine'.<sup>112</sup> Three months later, shareholders were informed that it had 'been purchased and all preparations are now completed for the erection of the plant, and we hope during the next six months to have the Battery crushing good payable ore'.<sup>113</sup> The following month, it was reported that it would be transported to Waiorongomai 'at once'.<sup>114</sup>

To reduce expenses, in July 1909 the council agreed that its tramway could be used to haul material, the only charge being for wages.<sup>115</sup> In January 1910, Manuel told his fellow councillors that material would be taken up in early February and that the battery would be in working order in about four months.<sup>116</sup> On 9 February the three engineers, Rich, Roche and Jeffreys, completed the design.<sup>117</sup> (Francis Arthur Rich was general manager of the Woodstock Company at Karangahake.<sup>118</sup> Francis James Roche, a mining engineer in China, Japan, and Australia before coming to New Zealand, was an engineer and contractor in Auckland.<sup>119</sup> Jeffreys has not been traced.)

In mid-February, John Law, the contractor erecting the battery, and a shareholder until April 1912,<sup>120</sup> informed Roche that he had made a track for sending 50 tons of timber down the 'uneven and steep' slope to the site.

It is raining heavy here to do and no body is at work I am getting a good scezed [sized] tent on friday so that four of us can live in it and making use of a few sheets of iron for a cooking shelter I cannot get enoudh work done and the men walk to the township. I

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<sup>112</sup> *Te Aroha News*, 12 August 1909, p. 2.

<sup>113</sup> Chairman of Directors to Shareholders, 10 November 1909, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>114</sup> *Te Aroha News*, 18 December 1909, p. 2.

<sup>115</sup> Piako County Council, Minutes of Meeting of 20 July 1909, Matamata-Piako District Council Archives, Te Aroha.

<sup>116</sup> Piako County Council, *Te Aroha News*, 20 January 1910, p. 2.

<sup>117</sup> Rich, Roche & Jeffreys, Plan of Bendigo Battery, 9 February 1910, Petitions to Supreme Court, 9/180, BBAE 5528, ANZ-A.

<sup>118</sup> See *Cyclopedia of New Zealand*, vol. 2, pp. 468-469.

<sup>119</sup> *Cyclopedia of New Zealand*, vol. 2, p. 471; Company Files, BADZ 5181, box 224 no. 1432; Bankruptcy Register 1905-1914, folio 243, BBAE 5639/2b, ANZ-A.

<sup>120</sup> Lists of Persons holding Shares, 12 May 1909, 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

hope you will be able to see that I am getting on with the work as fast as circumstances will permit.

He expected to have trouble with Peter Baine, a Te Aroha carter,<sup>121</sup> who was to cart the material from Te Aroha to Waiorongomai, as he was 'the greatest mug of a carter as I have come across since I have been in New Zealand'.<sup>122</sup> On the same day that he wrote, the council agreed that miners could assist to haul machinery up the tramway, any damage to be repaired at the company's expense.<sup>123</sup> After being railed from Thames, the battery was taken up the tramway 'and lowered down to the position'.<sup>124</sup> From March onwards, machinery, timber, and cement were hauled up the tramway for both battery and water race.<sup>125</sup> Two large pieces of kauri for stamper blocks never got beyond the foot of Fern Spur incline, presumably being rejected as being unsuitable, and were sold for £1 5s each in December.<sup>126</sup>

In mid-March 1910, the *Te Aroha News* believed that good progress was being made.<sup>127</sup> One month later, shareholders were told that the contractors were 'making good progress with the Battery and Water Race and with good weather the latter should be finished in another five weeks'.<sup>128</sup> At the end of May, earthworks for the battery were completed and timber and machinery delivered; 'all went up the tramway without any mishap'. However, water race construction had been delayed by wet

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<sup>121</sup> See *Auckland Weekly News*, 31 March 1899, p. 20; *Cyclopedia of New Zealand*, vol. 2, p. 832.

<sup>122</sup> John Law to F.J. Roche, 15 February 1910, Petitions to Supreme Court, 9/180, BBAV 5528, ANZ-A.

<sup>123</sup> Piako County Council, Meetings of Meeting of 15 February 1910, Matamata-Piako District Council Archives, Te Aroha.

<sup>124</sup> Evidence of John Law, Te Aroha Warden's Court, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

<sup>125</sup> Piako County Council, Letterbook 1909-1912, pp. 463-465 (1 July 1910), 482 (1 August 1910), 523-524 (4 October 1910), Matamata-Piako District Council Archives, Te Aroha.

<sup>126</sup> Piako County Council, Minutes of Meeting of 21 December 1910; Piako County Council to Bendigo Company, 22 December 1910, Letterbook 1910-1913, p. 181, Matamata-Piako District Council Archives, Te Aroha.

<sup>127</sup> *Te Aroha News*, 19 March 1910, p. 2.

<sup>128</sup> Chairman of Directors to Shareholders, 16 April 1910, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

weather.<sup>129</sup> At the beginning of June, Roche told Law that his contract was undermanned and that the job was going 'far too slowly'.<sup>130</sup> In mid-October, shareholders were told that erecting the plant was 'now being pushed on vigorously'.<sup>131</sup> It is a great pity that this work has been delayed so long owing to a misunderstanding between our Engineer and the contractor, but at the present rate of progress it should not be many weeks now before the Mill is working on good payable ore'.<sup>132</sup> The engineer was Frederick Paltridge, aged 29 in 1910,<sup>133</sup> who would become the battery superintendent. An assayer who had worked in cyanide plants, he had passed his superintendent's examination in 1904, on his second attempt.<sup>134</sup>

In February 1911, Law sued the company for £108 'due on Contract'.<sup>135</sup> He stated that he had signed a contract on 7 January the previous year to transport and re-erect the battery.

Progress payments, however, which were to be made monthly according to written agreement, were irregular and finally ceased. In September plaintiff refused to continue the contract unless and settlement was forthcoming and visited Counsel in Auckland. Plaintiff, defendants and their Counsel met in his office and a settlement was arrived at amounting to £571 17s for extras, with an exception of an item of £108 for excavations which it was claimed was part of the contract.<sup>136</sup>

Law believed that he should have been paid for both excavations and foundations.<sup>137</sup> The battery was to have been completed within six weeks, meaning 18 February, but as the plan for the building was 'not in existence

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<sup>129</sup> *Te Aroha News*, 31 May 1910, p. 2.

<sup>130</sup> R.J. Roche (for Rich, Roche & Jeffreys) to John Law, 2 June 1910, Petitions to Supreme Court, 9/180, BBAE 5528, ANZ-A.

<sup>131</sup> For photograph of the battery being constructed, see *Auckland Weekly News*, 1 September 1910, Supplement, p. 3.

<sup>132</sup> Chairman of Directors to Shareholders, 19 October 1910, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>133</sup> Death Certificate of Frederick Paltridge, 1 December 1952, 1952/35093, BDM.

<sup>134</sup> Mines Department, MD 1, 03/1236, ANZ-W; *Thames Star*, 16 December 1905, p. 4.

<sup>135</sup> Te Aroha Warden's Court, Record Book 1899-1946, Hearings of 28 February 1911, 28 March 1911, BBAV 11547/1b, ANZ-A.

<sup>136</sup> Warden's Court, *Te Aroha News*, 2 March 1911, p. 3.

<sup>137</sup> Statement of John Law, Petitions to Supreme Court, 9/180, BBAE 5528, ANZ-A.

until within a few days' of that date, the site 'could not be pegged out'. Law 'had to come to Auckland to get the plans, leaving the work hung up. When he went through the plans he found them defective and had to wait until they could be amended'; a retaining wall 'was shown practically perpendicular, and timber cut to special measurements, which was subsequently altered'. As 'no progress payments were made for the first six months', Law was 'nearly thrown into liquidation. The plans were repeatedly altered'. Law's counsel explained that the old amalgam battery was 'of a nearly obsolete pattern', worth less than £1,000, whereas the new one was a 'thoroughly up to date cyanide plant' worth from £4,000 to £5,000. The company 'had the audacity to include the whole of the extras in the original contract of £310, and the directors attempted to make the contractor believe he was merely entitled to the amount of the contract money'.<sup>138</sup>

The company's counter-claim was that Law did not complete the battery until 14 December. As the contract prescribed a penalty of £7 per week after the six weeks, it sought £310 for the 43 weeks' delay.<sup>139</sup>

Law told the warden's court that it 'took between three weeks and a month to remove the old battery to Waiorongomai'.<sup>140</sup> Baine said that, having carted it to Waiorongomai once it arrived at Te Aroha, it lay 'at foot of tramway 6 weeks before any was taken up. Not all taken up till June'. A carpenter stated that, after a wall was built behind the battery because of a slip, he had to construct a track to the site and excavate it. Some small boulders there were used for concrete.<sup>141</sup> Law said that he took up the site 'without the plan. If the timber had arrived to time the wall would have been built and the slip would not have occurred'.<sup>142</sup> Roche stated that he had kept prompting Law to employ more men and speed up the work. Rich, who took over supervision in September after Law 'retired' from the contract, argued that it should have taken only three weeks to finish the work then.<sup>143</sup> Law's explanation for the further delay was that 'he did not put more men on because he had not been paid. Thought the Company was insolvent. With all the alterations and additions the contract could have

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<sup>138</sup> Warden's Court, *Te Aroha News*, 2 March 1911, p. 3.

<sup>139</sup> Te Aroha Warden's Court, Plaints 1911, 1/11, BBAV 11572/3a, ANZ-A.

<sup>140</sup> Warden's Court, *Te Aroha News*, 2 March 1911, p. 3.

<sup>141</sup> Te Aroha Warden's Court, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

<sup>142</sup> Warden's Court, *Te Aroha News*, 2 March 1911, p. 3.

<sup>143</sup> Te Aroha Warden's Court, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

been completed in six months. His men left him when he could not pay them'.<sup>144</sup>

The warden, Frederick James Burgess, rejected the company's counter-claim because of the delays it had caused. Having been slow to provide the site and plans, Paltridge had then added extra requirements. The site was not surveyed until 22 February, four days after the erection should have been completed, and plans had not reached Law until after this date. Because the company had paid Law irregularly, paying him nothing at all in February, May, and July, he could not keep men continuously at work. While bad weather and a large landslip caused delays, the work was done far too slowly and should have been completed within five or six months. Paltridge did little more than make 'friendly remonstrances' to get Law working faster, apart from sending him a note on 2 June. Burgess did not award Law the £108 he sought, but neither did the company receive its £310; instead, he levied Law £36 in damages for the loss of use of the building.<sup>145</sup> This was a rate of £2 for 18 weeks. The company had 'shown great laxity in their dealings with the contractor, they had it in their power to fully man the contract, and this fact should mitigate the damages'.<sup>146</sup>

In April, the directors were 'sorry to report' that they had been 'very much disappointed in the delay' and the extra expense.

There is no doubt we have been greatly misled by our engineers and contractor; nevertheless it was brought to a head by a law case with the contractor suing the Company, when the true position of affairs was brought out in the law court between the engineers and contractor. Owing to this dispute all works at the battery were at a standstill for a considerable time. However, we have now our Battery Manager busily engaged in arranging all details for completion of the battery.<sup>147</sup>

On 20 April, the *Te Aroha News* reported that Paltridge was 'pushing work ahead with his good staff of men, and will soon have the battery complete'.<sup>148</sup> Material required for the wire tramway from near the foot of

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<sup>144</sup> Warden's Court, *Te Aroha News*, 2 March 1911, p. 3.

<sup>145</sup> Te Aroha Warden's Court, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

<sup>146</sup> Warden's Court, *Te Aroha News*, 30 March 1911, p. 2.

<sup>147</sup> Chairman of Directors to Shareholders, 20 April 1911, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>148</sup> *Te Aroha News*, 20 April 1911, p. 2.

Butler's Incline, including wood for hoppers at both ends, was not carried up the tramway until August.<sup>149</sup> On 10 August, the newspaper announced that heavy rain had delayed the start of the battery, which would certainly commence early the following week.<sup>150</sup> It did not, and it was not opened until the end of the month. The delighted *Te Aroha News* extensively reported the opening and hoped for a mining revival. (Its statement that cyanide was being used for the first time revealed that the experiments of Henry Hopper Adams<sup>151</sup> and Peter Ferguson<sup>152</sup> had been forgotten.)

### GOLDMINING AT WAIORONGOMAI BENDIGO COMPANY'S ENTERPRISE: INDUSTRY'S EARLY DAYS

An event that is expected to have an all important bearing on the future destinies of Waiorongomai was celebrated on Tuesday morning last in the form of the opening of the Bendigo Goldmining Company's battery. For the first time the ore secured from the Waiorongomai range of hills will be treated by the cyanide process and if the experiment proves successful it will be safe to assume that the gold industry, which many years ago was so thriving in Waiorongomai, will be revived locally to the undoubted benefit of the district immediately surrounding and of Te Aroha as the nearest business town.

It explained how both the mine and the battery would operate:

The ore obtained in the mine is conveyed by the tramway down the mountain side and it is then shot into small trucks and carried by means of an aerial tramway in a vertical drop of 800 feet from the ground tramway to the battery, which is situated about a mile up the hill from the mouth of the Waiorongomai Stream. In the arrangement of the plant, the Directors have carefully studied economy of working, and after being handled in the mine the ore reaches the battery without further manual labour being requisitioned. As a result of these efficient arrangements it is anticipated that the working expenses will not exceed 25s per ton and that consequently returns in excess of that figure will form the profit. The expectations are that in the

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<sup>149</sup> Piako County Council, Letterbook 1909-1912, pp. 914-915 (24 January 1912), Matamata-Piako District Council Archives, Te Aroha.

<sup>150</sup> *Te Aroha News*, 10 August 1911, p. 2.

<sup>151</sup> See paper on his life.

<sup>152</sup> See paper on Peter Ferguson and his New Era.

treatment not less than 80 per cent of the bullion passing through will be recovered, the old process previously in operation only having effected a saving of 40 to 45 per cent.

The erection of the battery was in itself a somewhat formidable task. The whole of the building material and plant had to be carted from Te Aroha, transported by means of the Council's tramway up the mountain to a high altitude and then lowered to the site of the battery. Some 18 months in all have been occupied in the work of construction.

#### The Christening Ceremony

The ceremony of "opening" the battery ... was performed in the presence of a large gathering of residents of Te Aroha and neighbourhood, bright sunshine and ideal spring weather being all in keeping with the occasion. The company were driven from Te Aroha to the foot of the hill and a climb of 1 1/2 miles having been negotiated the battery building was reached.

Standing on a stage within the building, Mr Manuel (addressing those present) stated that his daughter had been selected by the directors to perform the christening ceremony.

Miss Manuel then stepped forward and with the words "I have much pleasure in christening the Bendigo Gold-Mining Company's battery," she broke a bottle of wine over the machinery, which simultaneously commenced to revolve.

#### Speeches

A light lunch having been partaken of,

Mr Manuel (the Managing Director) expressed his pleasure in seeing such a large and representative gathering present. He was, he said, a proud man that day and for twelve months past he had been eagerly looking forward to that occasion. Some eighteen months ago the Directors met in Auckland and took into consideration the question of the best means of treating the ore, previous prospecting having convinced them that good results were open to be secured. Expert advice was called in and a subsequent meeting of shareholders ratified the Directors' proposals to introduce the cyanide process. The contract was let and they were promised completion in four months but that four months had grown to eighteen months as the outcome of various difficulties. That day, however, saw all their difficulties and disappointments overcome and a plant had been put into operation that was capable of treating 500 tons of ore per month, and saving 80 or 85 per cent of the bullion recovered (applause). He had been mixed up with the mining industry ever since he was nine years of age, and he was well acquainted with goldmining methods. He was able to assure them that the Bendigo Company was in possession of a most up to date plant, equal to anything in the country, having regard to its size, in its capacity to save gold (applause). He honestly believed that the

Bendigo Company had a most prosperous future before it (applause).

Mr J. Endean (a director) stated that he desired on behalf of the Directorate to publicly tender to Mr Manuel thanks for the arduous work he had so cheerfully carried out and he was, he said, able to bear testimony to the fact that Mr Manuel was mainly responsible for the Company having reached its present progressive state (applause)....

Mr Gavin (speaking on behalf of the Company's employees) remarked that every man had put his shoulder to the wheel and had done his duty and it was gratification to them to know their efforts had satisfied both the directors and the public (applause). Mr Gavin also acknowledged the valuable services rendered by Mr John Hill (the manager of the County Council's tramway) in expediting by every means in his power the transport of the company's plant.

Mr F. Paltridge (Battery Manager) also responded and mentioned that thanks to gravitation arrangements from the mine to the battery, economical working was assured. The quick-silver [mercury] plates would, he said, save them 35 to 40 per cent of the bullion, the vanners 5 per cent and the cyanide 35 to 40 per cent. He wished the Directors and the Company every success and he would not be found wanting in doing his best to bring about profitable results (applause).

Mr Gavin ... stated that the drawback in the past being that not more than 42 per cent of the gold could be saved. It had always been considered that if means were found to recover 80 to 90 per cent the success of mining on the Waiorongomai hills would be assured. He prophesied that if the low grade ore could be treated at from not more than 20s to 30s per ton numerous other batteries would soon be installed.<sup>153</sup>

The estimated cost of £1,500 to erect the battery was exceeded by £2,000, making the total cost of both battery and water race £3,900.<sup>154</sup>

## THE PLANT

In 1914, the site contained the battery building, the smelting house, the electrical house, the assay house, 'Men's Huts', the smithy, and 'other buildings'. Contents included two centrifugal pumps, one berdan in position

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<sup>153</sup> *Te Aroha News*, 31 August 1911, p. 3.

<sup>154</sup> Evidence of Charles Manuel, *Te Aroha Warden's Court, Plaints 1911, 1/1911*, p. 32, BBAV 11572/3a, ANZ-A; J.J. Macky, evidence given to Warden's Court, 1915, Mines Department, MD 1, 23/4/54, ANZ-W.

and others lying on the ground, two vanners, two agitators, one distributor, one riddler, six cyanide vats, ten heads of stampers (one damaged and one spare), pulleys, and tubs. The smelting and assay houses had all the necessary equipment, including a small and a large assay retorter and an assay furnace. The dynamo and Pelton Wheel were housed in the electrical house.<sup>155</sup>

After some modifications, in 1943 the plant consisted of a small stone crusher, ten head of stamps, two mortar boxes, two berdans, and eight cyanide tanks. The buildings were

built of corrugated iron on a wooden frame. The timber is chiefly kauri and rimu, and the main building measures 80ft in length by 30ft in width by 40ft in height at the front and 20ft in height at the back. In addition, there are three small buildings adjacent to the main one, namely, the blacksmith's shop, assay office, and dynamo shed. The dimensions of these are as follows:-

Blacksmith's shop – 30' x 15' x 12' high. Gable roof.

Assay office - 30' x 12' x 10' high. “ “

Dynamo shed - 8' x 8' x 8' high. Lean-to roof.

The measurements of all buildings are approximate. From visual inspection I should say that the bulk of the iron consists of sheets 6ft and 7ft in length, with a small number of 5ft lengths.<sup>156</sup>

### DIFFICULTIES WITH THE PROCESS

When Gavin obtained protection in August 1908, he explained that sampling and testing ore would show whether cyanide or smelting was the better treatment. Until a local smelting works was erected it was not possible to test the value of the different methods.<sup>157</sup> Before erecting the battery, two trial parcels were tested in Thames using cyanide, one of about five tons and the other of one ton, resulting in extraction of 85 per cent from the latter and 'about' 90 per cent from the former and producing gold valued at £17 10s. The directors were advised that there would be 'no difficulty in treating the Bendigo ore by the battery and cyanide process', and in April

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<sup>155</sup> Transfer of Bendigo Company property to Percy Spender, 28 February 1914, Te Aroha Warden's Court, Registrations 1914, no. 2268, BCDG 11288/5a, ANZ-A.

<sup>156</sup> E.J. Scoble (Inspector of Mines) to Under-Secretary, Mines Department, 29 April 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>157</sup> Te Aroha Warden's Court, Mining Applications 1908, 24/1908, BBAV 11289/19a, ANZ-A.

1909 stated that their plant would 'treat at least 200 tons per week' from the 'large payable' Silver King lode. 'Considering that the ore is worth about £3 per ton, and should be mined and treated for £1 10s per ton, you will see, Gentlemen, that we should have a good paying mine from the start'.<sup>158</sup> Shareholders approved the directors' proposal to use the cyanide process,<sup>159</sup> which was installed, although a later owner believed that at first only the old amalgamating method was used.<sup>160</sup> In May 1910, the warden reported that the owners were 'satisfied' that their refractory ores could 'be made to yield payable returns if known methods of treatment (in use outside the Dominion) are brought into operation'.<sup>161</sup> These new methods were neither revealed nor introduced.

In February 1911, Paltridge stated that the company 'had ore ready to crush – a fair amount – can't say if payable ore – made no assays'. One of the engineers erecting the battery, Roche, stated that he had tested one lot of ore and Gavin had tested another; 'values from about £1 to £18 a ton'. Gavin stated that in the paddock and stopes he had about 1,000 tons ready for treatment. 'Can't say if stone was payable – I think it is payable'. Paltridge expected that it would take from four to five months to crush the ore on hand.<sup>162</sup> In mid-October 1911, directors revealed that the success of the process was not known:

Our battery has been completed, and commenced crushing on September 1st, and was crushing about nine days when it was found necessary to stop and repair one of the stamper boxes foundation. This was only a small job in itself, but as the new concrete had to be given time to thoroughly set it was the means of stopping crushing operations for three weeks. Since the repairs

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<sup>158</sup> Charles Manuel to Director, Thames School of Mines, 9 November 1908, Inward Correspondence File 1907-1929, School of Mines Archives, Thames; Chairman of Directors to Shareholders, 16 April 1909, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A; Matthew Paul to Under-Secretary, Mines Department, 31 March 1910, *AJHR*, 1910, C-3, p. 18.

<sup>159</sup> *Te Aroha News*, 31 August 1911, p. 3.

<sup>160</sup> Rich, Roche & Jeffreys, Plan of Bendigo Battery, 9 February 1910, Petitions to Supreme Court, 9/180, BBAE 5528; *Te Aroha News*, 31 August 1911, p. 3; J.A. Pond to Secretary, Waiorongomai Gold Mines, 31 August 1933, Company Files, BADZ 5181, box 695 no. 4544, ANZ-A.

<sup>161</sup> Warden to Under-Secretary, Mines Department, 20 May 1910, *AJHR*, 1910, C-3, p. 41.

<sup>162</sup> Te Aroha Warden's Court, Plaints 1911, 1/1911, BBAV 11572/3a, ANZ-A.

have been attended to everything has been working very satisfactory.

Up to the present we have put through 250 tons of quartz. We have now on hand over 80oz of hot-water squeezed amalgam off the plates.

The Battery Manager is confident of getting good extraction from the concentrates, and also from the cyanide plant. Your Directors intend to crush 500 tons before cleaning up, then the shareholders will get a full report of the quantity put through, also the extraction obtained.<sup>163</sup>

At the beginning of November, 108oz of 'table amalgam' was retorted for a return of £116 7s 6d. The manager would clean up at the end of the month.<sup>164</sup> When 650 tons were crushed in December, the return was only £204, a sum not including concentrates, slimes, and slag. 'The extraction of the return is not considered by any means satisfactory, and the directors have decided to discharge all hands till after the holidays, when it is their intention to make fresh appointments all round'.<sup>165</sup> The next directors' report, for the six months to 31 March 1912, made gloomy reading:

Since our last Half-yearly Report, your Directors have had a very trying time, and a great deal of disappointment as the first result of the treatment of the ore.

Our late Battery Manager put through about 650 tons, with an average assay of £1 10s for the total return of £222, which shows that not more than 23 per cent of the bullion was saved.<sup>166</sup>

The report to the Mines Department gave 750 tons producing 104oz 13dwt.<sup>167</sup> In February, Robert Miller Hutchison, a publican at Raglan before becoming a Thames battery manager,<sup>168</sup> replaced Partridge, who

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<sup>163</sup> Chairman of Directors to Shareholders, 17 October 1911, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>164</sup> *Te Aroha News*, 4 November 1911, p. 3.

<sup>165</sup> *Auckland Weekly News*, 14 December 1911, p. 36.

<sup>166</sup> Chairman of Directors to Shareholders, 8 April 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>167</sup> *AJHR*, 1912, C-2, p. 75.

<sup>168</sup> See advertisement, *Waikato Argus*, 7 May 1900, p. 3; *Thames Electoral Roll, 1911*, p. 55.

became manager of the Waitawheta Gold Prospecting Company,<sup>169</sup> which worked another part of the field, also unsuccessfully.<sup>170</sup> The company advertised in Thames for three ‘Stamper-Men with knowledge of amalgamation and vanners, also One Man for cyanide treatment’.<sup>171</sup> Hutchison ‘spent a few weeks in making some small alterations’, after which he put through ‘about 250 tons’, the directors ‘anxiously waiting for the result’.<sup>172</sup> The latter, not revealed, created further disappointment. Mining was suspended until battery alterations were completed.<sup>173</sup> In April, the company applied for six months’ protection ‘pending obtaining tests and further capital’. Manuel said that because it had ‘met with poor success - percentages not nearly up to assay values’, the directors were ‘making inquiries as to better system of treatment’.<sup>174</sup>

In the year to March 1913, 246 tons treated with cyanide produced a mere 20oz 10dwt, worth £33 11s 7d.<sup>175</sup> Since registration, the company had spent £6,402 for a return of £273.<sup>176</sup> In Paul’s words, the returns had been ‘so disappointing that it was decided to cease operations’.<sup>177</sup> The ore had failed to meet expenses.<sup>178</sup>

The geological survey of the district reported the outcome of the company’s efforts to the end of 1911:

The Silver King is the principal lode in this company’s claim. This averages about 8ft where it has been worked. Besides this lode, the East-and-West, Werahiko, and Waitoki lodes have been

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<sup>169</sup> A. & G. Price Letterbook 1913-1914, p. 984 (26 March 1914), A. & G. Price Archives, Thames.

<sup>170</sup> See paper on companies and company financing in general and at Te Aroha in particular.

<sup>171</sup> Advertisement, *Thames Star*, 19 February 1912, p. 3.

<sup>172</sup> Chairman of Directors to Shareholders, 8 April 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>173</sup> Matthew Paul to Under-Secretary, Mines Department, 31 March 1912, *AJHR*, 1912, C-2, p. 38.

<sup>174</sup> Te Aroha Warden’s Court, Mining Applications 1912, 61/1912, BBAV 11289/21a, ANZ-A.

<sup>175</sup> *AJHR*, 1913, C-2, p. 57.

<sup>176</sup> *AJHR*, 1913, C-2, p. 64.

<sup>177</sup> Matthew Paul, to Under-Secretary, Mines Department, n.d., *AJHR*, 1913, C-2, p. 21.

<sup>178</sup> Henderson, p. 15.

exploited to some extent. The East-and-West lode is very large, and the Waitoki and Werahiko are each about 3ft in thickness. As far as can be ascertained, these lodes have yielded up to the end of 1911 as follows:-

	Long Tons	Oz.
Silver King .. .. .	180	132
Werahiko .. .. .	414	371
Waitoki .. .. .	<u>123</u>	<u>36</u>
	717	539

The company opened up the Silver King lode on the Tram level, and completed a low level beneath it, but here the lode was poor.... Unfortunately, the mine could not be made to pay.<sup>179</sup>

The Bank of New Zealand purchased only four consignments of gold. On 1 November 1911, it paid £116 10s 6d for 45oz 8dwt and six weeks later paid £17 6s 6d for a much inferior 31oz 10dwt. On 15 April 1912, two consignments were purchased. One, of 14oz 2dwt, was worth £28 14s 6d, but the other, of 74oz 10dwt, was only worth £5 3s 1d.<sup>180</sup> James Alexander Pond,<sup>181</sup> who would later own the battery, explained in 1933 that the plate amalgamation system first used saved 'very little of the values'. When vanners were tried the fines carrying the gold and silver were not saved, and the subsequent cyanide plant also failed to save more than a small percentage of the bullion'.<sup>182</sup>

The problem was not just the battery, as two mining engineers discovered when they inspected the workings in late 1912. They were 'very much disappointed':

The amount of quartz in sight, good, bad, and indifferent, is altogether inadequate to warrant crushing operations being continued for more than a few months, even if there was enough gold in it to cover the cost of operations. The lowest level seems poorer than the upper ones and the reef pinches considerably. We did not like the class of country either, and both of us came to the conclusion that there is nothing there to warrant any further examination.... We were told the assay value of the ore coming

<sup>179</sup> Henderson, pp. 117-118.

<sup>180</sup> Bank of New Zealand, Paeroa Branch, Gold Dealer's Book, entries for 1 November 1911, 14 December 1911, 15 April 1912, Bank of New Zealand Archives, Wellington.

<sup>181</sup> See paper on his life.

<sup>182</sup> J.A. Pond to Secretary, Waiorongomai Gold Mines, 21 August 1933, Company Files, BADZ 5181, box 695 no. 4544, ANZ-A.

through the screen of the mortar-box was 35/- [35s] per ton, but on asking the reason for the discrepancy between the assay value and the recovery, were told the gold was lost in the tailings. Judging from the appearance of the ore in the hopper, I should say the process as installed should save 80% of the value, and therefore come to the conclusion that the value was not in the ore at all.<sup>183</sup>

### THE END OF THE BENDIGO COMPANY

The directors' report for the half-year to 31 September 1912 was brutally brief. 'Since the last half-yearly report the battery has been closed down, and a Caretaker placed in charge, and protection has been obtained'.<sup>184</sup> In early April 1913 it was agreed to wind up the company, a decision confirmed the following month.<sup>185</sup>

Of the 17 investors who had acquired interests in September 1908, 12 had parted with their interests before 30 May 1912, the last date on which shareholdings were reported. Only Manson had retained his original holding. Gavin had 1,900, only 100 down on his original number, and his brother William had increased his interest from 250 to 375, confirming Gavin's belief that the mine would be payable. Bygrave held half his original number and McCullough, who had sold his last 500 in May 1909, had purchased another 730, also indicating confidence.<sup>186</sup> Of the directors, Manuel had bought and sold shares during 1909 and 1910, having 5,730 in May the former year and one year later retaining 1,000, having sold 6,730 during the previous 12 months. He retained the 1,000 for the remainder of the company's life, the minimum required to be a director.<sup>187</sup> Wright had retained 624, Whitley 4,575, Schollum 4,500, and John Endean 3,375, but the younger Endean had sold all his interest in September 1911 and

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<sup>183</sup> [Obliterated signature] to Komata Reefs Gold Mining Company, 20 December 1912, Eric Coppard Papers, Waihi.

<sup>184</sup> Chairman of Directors to Shareholders, 7 November 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>185</sup> Resolutions passed at meetings of 10 April 1913, 6 May 1913, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A; *Auckland Weekly News*, 17 April 1913, p. 36.

<sup>186</sup> Lists of Persons holding Shares, 10 September 1908, 12 May 1909, 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>187</sup> Lists of Persons holding Shares, 12 May 1909, 11 May 1910, 11 May 1911, 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

January 1912.<sup>188</sup> MacDonnell was the first director to sell all his remaining shares, in February 1911.<sup>189</sup> These sales indicated loss of faith in the prospects.

In June 1913, the liquidator, the company's former secretary, was realizing assets. He hoped a call of sixpence a share would raise sufficient to pay the outstanding rents, as the company did not want to surrender its ground. It was 'proposed to dispose of the Battery as a going concern', and the call should produce 'sufficient assets to liquidate all liabilities'.<sup>190</sup> In late September, the liquidator informed the receiver of gold revenue that he hoped to sell the machinery soon.<sup>191</sup> Liquidation was still not completed in late June 1914.<sup>192</sup>

### PERCY SPENCER

On 28 February 1914, for £250 Percy Spencer purchased the Cadman and Sceptre, the water race, and the battery. The contents of both mine and battery were listed in exhaustive detail, down to the number of bolts. The contents of the battery were given above. The mine included the usual equipment, including that required for a small smithy, and 'Men's huts'. Spencer also bought the 'aerial tramway and Tramway known as "Cadman's Extension" with all appliances for conveying quartz'.<sup>193</sup>

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<sup>188</sup> List of Persons holding Shares on 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>189</sup> Lists of Persons holding Shares on 11 May 1910, 11 May 1911, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>190</sup> C.A. Stubbs to Receiver of Gold Revenue, 20 June 1913, Te Aroha Warden's Court, Register of Licensed Holdings and Special Claims 1887-1909, folio 181, BBAV 11500/8b, ANZ-A.

<sup>191</sup> C.A. Stubbs to Receiver of Gold Revenue, 25 September 1913, Te Aroha Warden's Court, Mining Applications 1913, BBAV 11289/22a, ANZ-A.

<sup>192</sup> C.A. Stubbs (liquidator) to Assistant Registrar of Companies, Auckland, 24 June 1914, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>193</sup> Transfer of Bendigo Company property to Percy Spencer, 28 February 1914, Te Aroha Warden's Court, Registrations 1914, no. 2268, BCDG 11288/5a, ANZ-A.

Before becoming an Auckland solicitor, Spencer had worked in a bank and then been a stationer and printer.<sup>194</sup> During the mining boom of the 1890s, he invested in companies throughout the Hauraki Peninsula,<sup>195</sup> and was a director of three.<sup>196</sup> In the early twentieth century, he invested in one company at Thames before turning his attention to Waiorongomai.<sup>197</sup> In 1913 he had been fined for acting as a sharebroker for a short period, 'not being licensed to do so'.<sup>198</sup> A member of the Remuera Road Board, in that year he unsuccessfully sought election to the Auckland City Council.<sup>199</sup> His financial position was strong.<sup>200</sup>

Spencer had been involved in Waiorongomai mining from April 1910 onwards, when he applied for the Great Western Special Quartz Claim, 99 acres high in the valley, which was granted two months later.<sup>201</sup> In November, when protection was granted, a local miner John Tallentire,<sup>202</sup> who had pegged out the claim, told the warden that, with another man, he had prospected this 'very rough Country' above the Stoney Creek valley.

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<sup>194</sup> For example, *Thames Advertiser*, 3 June 1884, p. 2; *New Zealand Gazette*, 28 March 1895, p. 576, 26 September 1895, p. 1546; *New Zealand Herald*, 4 November 1889, p. 5, 15 January 1944, p. 8.

<sup>195</sup> For example, *New Zealand Gazette*, 16 February 1893, p. 234, 28 March 1895, p. 576, 19 September 1895, p. 1489, 26 September 1895, p. 1546, 5 December 1895, p. 1885, 12 December 1895, p. 1926, 19 December 1895, p. 1957, 16 January 1896, p. 89, 20 February 1896, p. 364, 16 July 1896, p. 1127, 23 July 1896, p. 1161, 13 August 1896, p. 1300, 1 December 1898, p. 1937.

<sup>196</sup> Company Files, BADZ 5181, box 112 no. 728, box 142 no. 916, ANZ-A; G.E. Alderton, *Auckland Goldfields Maps and Investors' Guide* (Auckland, 1896), p. 2.

<sup>197</sup> Company Files, BADZ 5181, box 265 no. 1524, ANZ-A.

<sup>198</sup> *Auckland Weekly News*, 31 July 1913, p. 26.

<sup>199</sup> *Observer*, 7 December 1912, p. 7, advertisement, 3 May 1913, p. 9; *Auckland Weekly News*, 8 May 1913, p. 24, 15 May 1913, p. 24.

<sup>200</sup> Bank of New Zealand, Auckland Branch, Manager's Diary 1900-1901, pp. 125 (15 April 1901), 127 (17 April 1901); Manager's Diary 1905-1907, pp. 77 (27 June 1906), 196 (30 July 1907); Manager's Diary 1907-1911, p. 48 (27 February 1908), entry for 27 June 1909, Bank of New Zealand Archives, Wellington; Probate, BBAE 1570, 73/44, ANZ-A.

<sup>201</sup> Te Aroha Warden's Court, Mining Applications 1910, 17/1910, BBAV 11289/20a, ANZ-A.

<sup>202</sup> See below.

‘The old workings are still in existence but not available at present’.<sup>203</sup> In May 1912, Spencer surrendered this ground.<sup>204</sup>

In April 1915 he sought a reduction in rents on the Sceptre and Cadman, and the following month for both battery and water race. The former was granted, but because the Thames High School objected the latter request was withdrawn.<sup>205</sup> The labour conditions, meaning the number of miners required, were suspended.<sup>206</sup> In July 1916, he sought six months’ protection for the claims because the war meant ‘no men – no capital’, but then withdrew his application.<sup>207</sup> Two months later, on behalf of the syndicate he represented, he surrendered the Sceptre.<sup>208</sup>

It had not been a profitable investment. In January 1915, when seeking a reduction in rent, Spencer complained that ‘stringency’ in the money market before 1914 had prevented him raising capital and the war had made matters worse. He would be unable to raise capital until money became ‘easier’ after the war. Waiorongomai was ‘a failure and the most disappointing of all the Auckland Gold Mining Districts’, and no mining was taking place. ‘The experience of two Companies during the past three years was of such a disappointing and utterly depressing nature that the wonder is that any man or body of men should have the courage to put their money into this unfortunate field’.<sup>209</sup> As the Bendigo mine and battery remained in Spencer’s name even after he ceased to have an active role in their working, he must have been a member of the syndicate that owned it until 1922.<sup>210</sup>

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<sup>203</sup> Te Aroha Warden’s Court, Mining Applications 1910, 88/1910, BBAV 11289/20a, ANZ-A.

<sup>204</sup> Te Aroha Warden’s Court, Mining Applications 1912, 58/1912, BBAV 11289/21a, ANZ-A.

<sup>205</sup> Te Aroha Warden’s Court, Mining Applications 1915, 2, 4/1915, BBAV 11289/22a, ANZ-A.

<sup>206</sup> Te Aroha Warden’s Court, Mining Applications 1915, 6/1915, BBAV 11289/22a, ANZ-A.

<sup>207</sup> Te Aroha Warden’s Court, Mining Applications 1916, 32/1916, BBAV 11289/22a, ANZ-A.

<sup>208</sup> Te Aroha Warden’s Court, Mining Applications 1916, 40/1916, BBAV 11289/22a, ANZ-A.

<sup>209</sup> Percy Spencer to Under-Secretary, Mines Department, 23 January 1915, Mines Department, MD 1, 23/4/54, ANZ-W.

<sup>210</sup> Te Aroha Warden’s Court, Register of Mining Privileges 1894-1910, folios 163, 168, BBAV 11500/2a; Mining Registrations 1919-1922, no. 3290, BCDG 11288/7a, ANZ-A.

ALFRED MARSHALL BRADBURN AND THE BENDIGO  
SYNDICATE

Alfred Marshall Bradburn, who had been born in 1882,<sup>211</sup> when he was a blacksmith at Onehunga in 1909 held shares in the Waitawheta Gold Prospecting Company, which explored the range between Waiorongomai and Waitawheta.<sup>212</sup> In May 1911, when a contractor based in Te Aroha, he held 1,215 shares in the Bendigo Company. The following April, when he either sold or forfeited all his 4,590 shares in it, he was an engineer living in Onehunga.<sup>213</sup> In September 1913, when he purchased 48 acres of farmland at Waiorongomai, he described himself as a foundry employee at Onehunga.<sup>214</sup> The following year, he obtained permission to lease 95 acres of the hillside behind his land.<sup>215</sup> In 1915, he was permitted to lease some township sections.<sup>216</sup> His brother, Ernest Henry, also a member of the Bendigo Company in 1912, leased about 530 acres of the hillside in 1916 for cattle grazing.<sup>217</sup> In 1910, Ernest, a tailor, had held shares with him in a Thames company.<sup>218</sup> In 1918 he gave his occupation as engineer.<sup>219</sup>

In December 1914 and the following month, Bradburn sent two samples to the Thames School of Mines. The first produced 9dwt of gold and

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<sup>211</sup> Birth Certificate of Alfred Marshall Bradburn, 5 December 1882, 1882/1601, BDM.

<sup>212</sup> List of Persons holding Shares on 8 December 1909, Company Files, BADZ 5181, box 222 no. 1314, ANZ-A.

<sup>213</sup> Lists of Persons holding Shares on 11 May 1911, 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A.

<sup>214</sup> Piako County Council, District Valuation Roll, Te Aroha Riding, 31 March 1911, Valuation Department, BBBC A150/903, bundle 218, no. 105, ANZ-A [first name recorded as Alexander].

<sup>215</sup> Thames High School Board of Governors, Minutes of Meetings of 7 July 1914, 1 September 1914, High School Archives, Thames.

<sup>216</sup> Thames High School Board of Governors, Minutes of Meetings of 9 February 1915, 1 June 1915, 7 November 1916, High School Archives, Thames.

<sup>217</sup> List of Persons holding Shares on 30 May 1912, Company Files, BADZ 5181, box 226 no. 1332, ANZ-A; Thames High School Board of Governors, Minutes of Meeting of 4 July 1916, High School Archives, Thames; *Te Aroha News*, 4 January 1915, p. 3.

<sup>218</sup> Company Files, BADZ 5181, box 265 no. 1524, ANZ-A.

<sup>219</sup> Personnel Records of Alfred Marshall Bradburn, Army Department, AABK 18805, W5520, no. 17158, ANZ-W.

8oz of silver, valued at £2 12s.<sup>220</sup> One month later, when sending the second sample, he wanted to know the best method of treatment, the best place for treating refractory ore, and where he could obtain more information.<sup>221</sup> Clearly he did not have faith in the Bendigo battery's ability to treat this ore. This sample produced 1oz 12dwt of gold and 61oz 8dwt of silver, worth £12 10s 9d.<sup>222</sup> A sample taken in May 1916 of 'black silicified pyritic rock' produced only a trace of gold.<sup>223</sup> Late that year, the property was taken over by a syndicate, which spent a 'considerable amount of money repairing the water race and Mill'.<sup>224</sup> Bradburn informed the council in October of their 'hopes' for 'very extensive operations'. They would immediately install five stamps, 'and if the work warranted it they would put in ten'.<sup>225</sup> His request to use Butler's Incline temporarily was approved.<sup>226</sup>

The following February, quartz was being lowered down Butler's Incline, and on behalf of the syndicate Bradburn asked the council both for a new rope for it and 'a few more of the trucks as his supply at present is not enough'.<sup>227</sup> The following month, he told Paul that he wanted to install a small pepper drill plant in the mine, and asked which was the best type.<sup>228</sup> One month later, Paul described Bradburn as the head of the Bendigo syndicate. Four men were working an open cut on a six foot-wide lode valued, they said, at 30s a ton. The ore was easily broken out, and

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<sup>220</sup> Thames School of Mines, Assay Book 1907-1919, entry for 1 December 1914, School of Mines Archives, Thames.

<sup>221</sup> A.M. Bradburn to Director, Thames School of Mines, 9 January 1915, Inwards Correspondence 1912-1916, School of Mines Archives, Thames.

<sup>222</sup> Thames School of Mines, Assay Book 1907-1919, entry for 8 February 1915, School of Mines Archives, Thames.

<sup>223</sup> Thames School of Mines, Assay Book 1907-1919, entry for 29 May 1916, School of Mines Archives, Thames.

<sup>224</sup> Matthew Paul to Under-Secretary, Mines Department, 17 May 1917, Mines Department, MD 1, 17/86, ANZ-W [name recorded as Broadbent in report of 4 July 1917].

<sup>225</sup> *Te Aroha News*, 18 October 1916, p. 3.

<sup>226</sup> Piako County Council, Minutes of Meetings of 16 October 1916, 22 November 1916, Matamata-Piako District Council Archives, Te Aroha.

<sup>227</sup> Piako County Council, Minutes of Meeting of 19 February 1917; Memorandum of 23 February 1917, Letterbook 1916-1917, Matamata-Piako District Council Archives, Te Aroha.

<sup>228</sup> A.M. Bradburn to Matthew Paul, 23 April 1917, Inspector of Mines, Waihi, BBDO A902, M6, ANZ-A.

three men would be able to keep five head of stamps going for eight hours a day. After the water race and battery was repaired, Bradburn sent only a few trucks down before the rope broke. It was Paul's 'opinion that unless the values improve it will be found impossible to mine and treat 30/- ore at a profit'. He noted that the syndicate had spent a 'considerable amount of money'.<sup>229</sup> Paul later reported that work was confined to prospecting,<sup>230</sup> presumably after the rope on the incline broke in mid-year.

In June, Bradburn was informed that the Mines Department would provide a £1 for £1 subsidy up to a limit of £87 to provide a second-hand rope for the incline, and was asked if his syndicate would make up the balance.<sup>231</sup> The following month, as he had not responded, he was asked about his intentions and 'also if he has had the damaged trucks put in good repair'.<sup>232</sup> Presumably the trucks had been damaged when the rope broke. As the syndicate preferred to buy its own second-hand rope, the department did not provide one.<sup>233</sup> Pond stated in May 1918 that Bradburn was tributing in the mine when this rope was obtained.<sup>234</sup>

In February 1918, Bradburn arrived in a military camp to train for fighting in the New Zealand Expeditionary Force.<sup>235</sup> At that time he was working as an engineer at the Glaxo dairy factory at Matangi. He left for England in June but returned in December,<sup>236</sup> and in the following May he

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<sup>229</sup> Matthew Paul to Under-Secretary, Mines Department, 19 May 1917, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>230</sup> Report by Matthew Paul, n.d., *AJHR*, 1918, C-2, p. 31.

<sup>231</sup> Clerk, Piako County Council, to A.M. Bradburn, 12 June 1917, Piako County Council, Letterbook 1916-1917, p. 172, Matamata-Piako District Council Archives, Te Aroha.

<sup>232</sup> Piako County Council, Minutes of Meeting of 16 July 1917, Matamata-Piako District Council Archives, Te Aroha.

<sup>233</sup> Matthew Paul to Under-Secretary, Mines Department, 25 July 1918, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>234</sup> J.A. Pond to Matthew Paul, 25 May 1918, Inspector of Mines, Waihi, BBD0 18634, A902, MM138, ANZ-A.

<sup>235</sup> Matthew Paul to Under-Secretary, Mines Department, 18 October 1918, Mines Department, MD 1, 21/2/4, ANZ-A; *New Zealand Expeditionary Force, 1914-1918: Alphabetical roll*, Roll 83, p. 11, no. 74154; Personnel Records of Alfred Marshall Bradburn, Army Department, AABK 18805, W5520, box 107, no. 17158, ANZ-W; Death Certificate of Alfred Marshall Bradburn, 10 August 1966, 1966/35189, BDM.

<sup>236</sup> Personnel Records of Alfred Marshall Bradburn, Army Department, AABK 18805, W5520, no. 17158, ANZ-W.

sent another sample to the Thames School of Mines asking to be told 'if there is any value there in, and if there is, is it refractory, and what would be the best treatment'.<sup>237</sup> The answer has not been traced, but would have been discouraging, for by October he was living at Mangawhare, near Dargaville, and later became a dairy farmer at Hikurangi, also north of Auckland.<sup>238</sup> He continued to be interested in mining, having samples from there tested in 1932, and in the mid-1930s being chairman of directors of the Heather Bell Company, which mined at Boat Harbour, near Tairua.<sup>239</sup>

### JOHN TALLENTIRE MANAGES THE MINE

When Paul inspected the mine in mid-May 1917, John Tallentire was managing it for the Bendigo Company.<sup>240</sup> An experienced prospector who had assisted with the geological survey of the district,<sup>241</sup> he had earlier managed the Westralia and Waitawheta claims at Waiorongomai.<sup>242</sup> From 1909 onwards, he was associated with John Alexander Pond, a leading Auckland chemist and mining investor,<sup>243</sup> and Spencer.<sup>244</sup> In mid-1917,

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<sup>237</sup> A.M. Bradburn to Director, Thames School of Mines, 12 May 1919, Assay Correspondence 1917-1920, School of Mines Archives, Thames.

<sup>238</sup> Personnel Records of Alfred Marshall Bradburn, Army Department, AABK 18805, W5520, no. 17158, ANZ-W; Death Certificate of Alfred Marshall Bradburn, 10 August 1966, 1966/35189, BDM.

<sup>239</sup> A.M. Bradburn to Director, Thames School of Mines, 15 December 1932, Inwards Correspondence 1932-1933; Director, Thames School of Mines, to A.M. Bradburn, 23 December 1932 Outwards Correspondence 1932-1936, School of Mines Archives, Thames; A.M. Bradburn to Under-Secretary, Mines Department, 27 July 1935, Mines Department, MD 1, 8/50, Part 2, ANZ-W; Company Files, BADZ 5181, box 750 no. 4915; Inspector of Mines, Waihi, BBDO 18634, A902, S247, ANZ-A.

<sup>240</sup> Report by Matthew Paul, 17 May 1917, Mines Department, MD 1, 1917/86, ANZ-W.

<sup>241</sup> *New Zealand Herald*, 22 June 1896, p. 6; Director, Geological Survey, to Under-Secretary, Mines Department, 30 March 1914, Commerce Department, AATJ 6090, 1865, ANZ-W.

<sup>242</sup> Te Aroha Warden's Court, Mining Applications 1909, 12, 13, 26, 161/1909; Mining Applications 1910, 57, 88/1910, BBAV 11289/20a; Mining Applications 1913, 10/1913, BBAV 11289/22a; Company Files, BADZ 5181, box 222 no. 1314; box 313 no. 1756, ANZ-A; *Te Aroha News*, Warden's Court, 27 May 1909, p. 2, 4 December 1909, p. 2, 9 December 1909, p. 2; *AJHR*, 1911, C-3, p. 22.

<sup>243</sup> See paper on his life.

Tallentire was managing three men in the mine and one in the battery. 'Work at Mine consists of taking out lode by means of an open cut'. The lode averaged four feet in width,' said to be worth 30/- per ton'. Only five heads were being used in the battery, crushing for eight hours a day.<sup>245</sup>

In October 1918, when Tallentire lowered 100 tons down the tramway, Paul assured his department that he was fully competent, having worked it for ten years.<sup>246</sup> Five months later, he was still working for the company,<sup>247</sup> though no longer as manager.

### JOHN EATON REID MANAGES THE MINE

In 1918, Pond took a more active role in the syndicate. John Eaton Reid, an engineer and another member, was to manage its properties. Although later calling itself the Bonanza Gold Mining Company,<sup>248</sup> it was really a private syndicate that never registered this company. It was, as usual, under-capitalized. While its financial dealings are not known, the fact that the only surviving detail of its bank account was a credit balance of 2s 6d may be taken as indicative.<sup>249</sup> Five months later, in August 1921, Reid claimed that during three years they had taken out ore, spending 'about £6000 besides what we won'.<sup>250</sup>

In January 1918, Pond sought advice from Paul about the mine.

We were getting on nicely with this and intended cleaning up just before Christmas when poor Williams [not traced] was taken ill with Appendicitis & was taken to the hospital, operated on same night & died the following morning. The poor fellow was very

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<sup>244</sup> For example, Te Aroha Warden's Court, Mining Applications 1910, 17/1910, BBAV 11289/20a, ANZ-A.

<sup>245</sup> Matthew Paul to Under-Secretary, Mines Department, 17 May 1917, Mines Department, MD 1, 17/86, ANZ-W.

<sup>246</sup> Matthew Paul to Under-Secretary, Mines Department, 18 October 1918, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>247</sup> Matthew Paul to Under-Secretary, Mines Department, 11 March 1919, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>248</sup> Report by Matthew Paul, n.d., *AJHR*, 1921, C-2, p. 26.

<sup>249</sup> Bank of New Zealand, Te Aroha Branch, Half-Yearly Balance at 31 March 1921, Creditor Account, Bank of New Zealand Archives, Wellington.

<sup>250</sup> J.E. Reid to Minister of Mines, 23 August 1921, Mines Department, MD 1, 21/2/4, ANZ-W.

troubled that he had not been able to clean up, as though that mattered.

He sought help in finding someone who could clean up the battery. ‘Poor Dick Macky my co-owner is in France doing his “bit” & I want to keep matters going on his account. I have another trouble, there is no cyanide to be bought but I think I can get over that by borrowing until the next shipment’.<sup>251</sup> (As no Richard Macky was recorded as fighting with any New Zealand contingents during the First World War, he must have been British or an Australian.) In late May, Pond protested to Paul against council plans to remove the tramway rails because it needed to convey ore, cyanide, lime, and zinc to the battery and concentrates out. The Bendigo syndicate had taken over the rope that Bradburn had obtained for the incline. ‘We have had very considerable difficulty’ in obtaining supplies and a manager for the battery, but as a manager had been obtained, it would re-start once the hoppers were full. ‘We have expended a good deal of money during the past year preparing to work vigorously to regain that which we have spent or at all events some of it’.<sup>252</sup> There was a considerable amount of ore in the hoppers awaiting treatment once Pond obtained sufficient cyanide.<sup>253</sup> The Minister of Mines told the council that he had received a ‘strongly-worded letter of protest’ from the owners about removing the rails,<sup>254</sup> and ruled that they should stay. In mid-June, when thanking Paul for his assistance, Pond told him that he was ‘in treaty with a very good man to run the battery & have a share in the mine and I anticipate he will go up there next week to see what is required to make a start. I have had great difficulty in securing a battery manager’.<sup>255</sup> It seems that the man he had appointed one month previously had walked out on him.

In late August, Reid announced that he hoped to have the battery ‘in working order again in a few weeks’. According to the local newspaper,

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<sup>251</sup> J.A. Pond to Matthew Paul, 15 January 1918, Inspector of Mines, BBDO 18634, A902 M6, ANZ-A.

<sup>252</sup> J.A. Pond to Matthew Paul, 25 May 1918, Inspector of Mines, BBDO 18634, A902, MM138, ANZ-A.

<sup>253</sup> Matthew Paul to Under-Secretary, Mines Department, 20 May 1918, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>254</sup> Piako County Council, *Te Aroha News*, 19 June 1918, p. 3.

<sup>255</sup> J.A. Pond to Matthew Paul, 19 June 1918, Inspector of Mines, BBDO 18634, A902, MM138, ANZ-A.

‘treatment difficulties were the trouble in the past, but we believe they can now be overcome’. There were, it claimed, four payable reefs. Reid intended to work in a small way at first, because of a lack of suitable labour and the high cost of stores. ‘We are assured it is a genuine undertaking, which will be considerably enlarged as soon as possible’.<sup>256</sup>

Early in October, Reid complained to the minister that he and Pond had started working the Bendigo but that the council would not let them use the tramway because the county engineer wrongly considered it unsafe. The council declined their offer to work it with their own men (who were all covered by insurance), pay for all breakages, and keep their section in repair. ‘We have our own good rope on the incline and have cleared the tramway of the furze [gorse] and fern that practically covered it’.<sup>257</sup> Pond and the syndicate secretary insisted that Reid was ‘thoroughly experienced’ and had already sent 100 tons down to the battery.<sup>258</sup> After reconsideration, the council allowed the syndicate to use the incline on condition that it paid for any breakages.<sup>259</sup> In 1920, along with Hardy’s Mines, it contributed to repairing the tramway.<sup>260</sup>

In October 1918, four men were working in the Bendigo. East of the crosscut a block 70 feet in length had been opened up on a five foot-wide lode, providing backs of 40 feet, said to be worth £3 a ton. A block on the western side 70 feet in length was also ready for stoping’.<sup>261</sup> During 1918, 60 tons produced £67.<sup>262</sup> The following March, Paul reported that ‘owing to the high cost and difficulty of obtaining cyanide, no crushing has been done’.<sup>263</sup> One month later, he wrote that ‘until recently two men were employed in the Bendigo Mine, but owing to the extraction falling far below

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<sup>256</sup> *Te Aroha News*, 21 August 1918, p. 2.

<sup>257</sup> J.E. Reid to Minister of Mines, 7 October 1918, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>258</sup> J.A. Pond and J.C. Macky to Minister of Mines, 8 October 1918, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>259</sup> Matthew Paul to Under-Secretary, Mines Department, 11 May 1919, Mines Department, MD 1, 24/2/4, ANZ-W.

<sup>260</sup> *Te Aroha News*, 7 July 1920, p. 2.

<sup>261</sup> Matthew Paul to Under-Secretary, Mines Department, 18 October 1918, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>262</sup> Report by Matthew Paul, n.d., *AJHR*, 1919, C-2, p. 29.

<sup>263</sup> Matthew Paul to Under-Secretary, Mines Department, 11 March 1919, Mines Department, MD 1, 21/2/4, ANZ-W.

expectations, Mr Reid, one of the owners, is experimenting with the last lot broken out ... in order to ascertain cause of loss in treatment'.<sup>264</sup>

In November 1919, Reid wrote an angry letter to the council, prompted by it destroying part of the lower track when developing its quarry:

It is now over five weeks since you agreed to accept the Government subsidy to clear and repair the Waiorongomai tramway. You had Mr [Walter] Greening's<sup>265</sup> and my own promise that we would pay half the money required and would have had a cheque at once, and still nothing has been done. You also promised that the road would be fixed up for us to sledge our stores, etc. Not only is this not done, but the piece of road you did excavate has been cut away – and then you say you are not antagonistic to mining! If your council actually laid themselves out to kill any attempt at mining you couldn't be more unsympathetic. Knowing you have a large county to administer, I have been patient and have not worried you, and the result is the matter has been shelved. I want that tramway cleared and repaired now, not next year, and if your staff has not the time to attend will you let me call tenders for the work and supervise it? I also want the road, and if you'll give me say £10 towards fixing it I will do the job and pay any extra costs myself. Provided I don't interfere with your quarry and tram, I do not see how you can object to this. I will meet your engineer at any time or any day within a week and show him what I purpose doing. If you are not prepared to agree to my suggestion and will not undertake the work yourselves kindly say so definitely, so that I will know where I stand. If you intend doing anything kindly let me know the date on which the work will start.

After the chairman pointed out that there had been 'no undue delay' because Reid 'had withheld his cheque, thus delaying the work himself', councillors agreed to pay him the £10 requested.<sup>266</sup> Four months later, in asking the council to clear the upper track, Reid wrote that 'for some years now our men have kept this track open'. As he would soon have 'more men living at the mine, I want to induce a storekeeper to pack stores to them'.<sup>267</sup> In September, he wrote again, referring to this letter and the council's response:

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<sup>264</sup> Matthew Paul to Under-Secretary, Mines Department, 15 April 1919, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>265</sup> Manager of Hardy's Mines: see paper on this company.

<sup>266</sup> Piako County Council, *Te Aroha News*, 19 November 1919, p. 2.

<sup>267</sup> Piako County Council, *Te Aroha News*, 21 April 1920, p. 2, 22 September 1920, p. 3.

Through an error, or the absence of the Engineer, you thought I meant the lower road through the quarry – and answered accordingly. This, however, is another track altogether, and is the only road to the mines. I understand you have applied for a government grant, and government grants are slow in arriving, and what I suggest is that you spend a few pounds in repairing this track and cutting gorse, so that a pack-horse could be taken up without danger. Your Engineer can tell you how bad this track is, and £10 to £20 would make it passable, while if delayed until the Government red-tape unwinds it will cause accidents, besides “inconvenience.”

Councillors responded that they were without funds until the government grant was received.<sup>268</sup>

During 1920, 200 feet were driven on the Silver King lode and 15 feet on the Bonanza (in the claim of that name). There were 300 tons stacked awaiting treatment when Pond’s oil-flotation plant was completed.<sup>269</sup> In March 1921, Paul reported that Butler’s Incline was being used constantly by the syndicate, then employing eight men. Reid was ‘confident’ that he could ‘make the ore opened up from the Smithy level on the Bendigo lode pay’.<sup>270</sup> Five months later, Reid claimed to be perfecting a process to treat the refractory ores of the district.<sup>271</sup> During 1921, four men employed by the Bendigo Syndicate crushed 40 tons for a return of 183oz 2dwt, valued at £53 8s,<sup>272</sup> an indication of the low values. In 1922 the syndicate abandoned its properties, and Reid left the district. In 1931, when required to pay rent owing on his residence site, he explained that when managing the Bendigo and Bonanza claims for a syndicate he had pegged it out for use as a shed or store for it. When the mine closed in 1922, he settled at Ngatea and established a small engineering shop, which he ran until his death.<sup>273</sup>

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<sup>268</sup> Piako County Council, *Te Aroha News*, 22 September 1921, p. 3.

<sup>269</sup> Report by Matthew Paul, n.d., *AJHR*, 1921, C-2, p. 26.

<sup>270</sup> Matthew Paul to Under-Secretary, Mines Department, 10 March 1921, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>271</sup> J.E. Reid to Minister of Mines, 23 August 1921, Mines Department, MD 1, 21/2/4, ANZ-W.

<sup>272</sup> *AJHR*, 1922, C-2, p. 10.

<sup>273</sup> J.E. Reid to Registrar, Warden’s Court, 28 March 1931; J.E. Reid to Minister of Mines, 27 April 1931, *Te Aroha Warden’s Court, Mining Applications 1931*, 4/1931, BCDG

## POND'S OIL FLOTATION PLANT

Paul reported that during 1921 four men had been driving and stopping. 'The ore won was treated by the oil-flotation process, but the results did not come up to the anticipations, and work has been temporarily suspended'.<sup>274</sup> According to another report, the cyanide process was used.<sup>275</sup> Pond purchased the Cadman and the battery and water race from Spencer at the end of March 1922, for £260,<sup>276</sup> and a month and a half later Spencer obtained protection for these properties,<sup>277</sup> presumably on Pond's behalf. The 'temporary suspension' became permanent, and the battery was never used again.<sup>278</sup> In 1924, Pond told Paul that as he was convinced that his concentrates could be treated in New Zealand, he was erecting a furnace to test 'this possibility'.<sup>279</sup> (As no such furnace was erected at the battery, it must have been built in Auckland.)

In December 1926, Pond auctioned the Cadman and Bonanza plus the water race and the battery. The latter was advertised as 'in going order, machine shop, huts for men on mine, assay house, outhouses, copper plates and cyanide plant, 2 batteries for oil flotation, rock breaker with self feeders, aerial from main tram to hoppers, about 4 tons tailings, estimated value about £50 a ton, etc, etc'.<sup>280</sup> There were no bids, and although early the following year Pond dealt with an agent who claimed he could attract interest,<sup>281</sup> the battery remained in his hands. In February 1928, he told Paul that he was 'loath to see the battery broken up & lost to the field and

11289/2a; Probates, BBAE 1570, 1633/52, ANZ-A; Death Certificate of John Easton Reid, 10 August 1952, 1952/23620, BDM.

<sup>274</sup> Report by Matthew Paul, n.d., *AJHR*, 1922, C-2, p. 21.

<sup>275</sup> *AJHR*, 1922, C-2, p. 28.

<sup>276</sup> Te Aroha Warden's Court, Register of Mining Privileges 1894-1910, folios 163, 168, BBAV 11500/2a; Mining Registrations 1922, no. 3290, BCDG 11288/7a, ANZ-A.

<sup>277</sup> Te Aroha Warden's Court, Register of Applications 1921-1934, Hearing of 17 May 1922, BBAV 11505/6b, ANZ-A.

<sup>278</sup> See paper on Pond's life.

<sup>279</sup> J.A. Pond to Matthew Paul, 6 September 1924, Inspector of Mines, BBDO 18634, A902, MM8, ANZ-A.

<sup>280</sup> Advertisement, *Te Aroha News*, 3 December 1926, p. 1.

<sup>281</sup> J.A. Pond to Matthew Paul, 17 January 1927, Inspector of Mines, BBDO 18634, A902, M6, ANZ-A.

would rather give it to the Government than that, and some effort should be made to retain it here'. He wanted to discuss this with Paul;<sup>282</sup> no record has survived of any meeting, and the government did not acquire the battery.

In August 1933, Pond explained to the secretary of Waiorongomai Gold Mines, one of the ephemeral companies attempting to revive mining during the depression,<sup>283</sup> that the battery had saved little ore.

It then came into my hands and I gave considerable attention to it with the same results which I found on close investigation to be due to the copper salts in the ore. I decided then to treat the crushed ore by the oil flotation method and on the small tests this proved a remarkable success, and a plant capable of dealing with several tons a day was built, which was later increased in size and about six or eight tons of concentrates obtained assaying from £40 to £50 a ton.<sup>284</sup>

Despite claiming 'remarkable success', his attempts from 1919 to 1922 to make the plant work profitably failed. In May 1922, when seeking protection for the Bonanza 'pending ore treatment', he stated that work on it and the Cadman during the past eight years had shown 'that by the ordinary process of mercury treatment the ore could not possibly pay'. Accordingly, after obtaining extra capital early in 1919 'a considerable amount' of work was done in the mine and the greatly altered battery. After 'a large amount of experimental work was carried out to test the possibility of saving the values in the ore by the oil concentration process which had proved successful in several of the mines of Australia and elsewhere', he erected the appropriate plant and imported the necessary oil. The outcome did not achieve 'the full success we had hoped to obtain though several tons of oil concentrates have been won some being of the value of £20 to £30 per ton', much lower than he claimed 11 years later. 'Attempts to recover the riches from these concentrates at our plant have proved a failure owing to

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<sup>282</sup> J.A. Pond to Matthew Paul, 20 February 1928, Inspector of Mines, BBDO 18634, A902, MM8, ANZ-A.

<sup>283</sup> See paper on company formation in the 1930s.

<sup>284</sup> J.A. Pond to Secretary, Waiorongomai Gold Mines, 21 August 1933, Company Files, BADZ 5181, box 695 no. 4544, ANZ-A.

the refractory nature of the ore'.<sup>285</sup> Two years later, because Pond remained convinced that his concentrates could be treated in New Zealand, he was erecting a small furnace to test 'this possibility',<sup>286</sup> but no success was reported. A fundamental problem was that the oil flotation concentrates contained insufficient bullion 'to pay for shipment and treatment'.<sup>287</sup>

### THE ABANDONED BATTERY

In January 1931, a *Te Aroha News* article on 'Old Waiorongomai' described walking up the lower track to the 'loop in the stream' where 'the only battery left now intact' was 'still, grey and silent':

The building itself was erected to suit the rugged walls to which it clings. Such a slant is given to its foundation so as to give it a most grotesque appearance. It is constructed in the main of huge pit-sawn slabs. Concrete forms a good proportion of the foundations which carry the battery heads and all the crushing devices. Driving belts hang listlessly from pulley to pulley. Over the whole works there is an atmosphere of neglect and decay. Shaky flights of stairs lead from storey to storey from the receiving hoppers to the cyanide vats in the basement. Bundles of zinc flux used to attract the gold solution in the vats lie scattered over the floor. Buckets, barrels and receptacles of various types lie haphazardly in every corner. In the smelting house the last renderings still lie in the retort – a twisted mass of zinc, still yellow with the heat. A lone apple tree with hard green fruit nodding from the ends of its sleepy boughs pushes an inquisitive branch through an open window. It is the only living reminder of civilisation in the wide expanse of the silent virgin valley. Half a dozen huge storage vats of corrugated iron border the stream, still in a fair state of preservation.

The astonishing fact has yet to be learnt. This entire battery with all its cumbersome machinery was turned by water played on a Pelton wheel a little more than 4ft in diameter. This is situated a

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<sup>285</sup> Declaration by J.A. Pond, 15 May 1922, Te Aroha Warden's Court, Mining Applications 1922, 10/1922, BCDG 11289/1a, ANZ-A.

<sup>286</sup> J.A. Pond to Matthew Paul, 6 September 1924, Mines Department, MD 1, 10/7/23, Inspector of Mines, BBDO A902, MM8, ANZ-A.

<sup>287</sup> Matthew Paul to Under-Secretary, Mines Department, 14 March 1928, Mines Department, MD 1, 10/7/23, ANZ-W.

little to the left of the main shaft and special water pressure was provided by a pipe line lead from the hills.<sup>288</sup>

The following month, Thomas Stewart, a farmer who was doing some mining,<sup>289</sup> complained that farmers were vandalizing mining remains: 'every portable article in the Bendigo Battery stolen or destroyed, rock crusher truck wheels bran[d] new busted and sold for scrap iron'.<sup>290</sup> In December, another miner gave the warden 'a detailed description' of the battery, which 'was not in working order'.<sup>291</sup> Les Hill, son of the last tramway manager, in a 1975 interview recalled that (at an unspecified date) he had pulled 'the belt from crusher to Pelton wheel and made it work. Some sheds there even had mining instruments left in them'.<sup>292</sup>

The battery had not been forgotten. In 1932, a Wellington newspaper understood that this plant was 'particularly suitable' for Waiorongomai ore.<sup>293</sup> In August 1933, Pond told the secretary of Waiorongomai Gold Mines Ltd that the plant was 'in working order and very little cost would be required to put it in working order'.<sup>294</sup> Two months later, this new company declared that it intended to acquire and recondition the battery 'and install an additional Oil Flotation Plant'.<sup>295</sup> Two years later, another ephemeral firm, the Waiorongomai Gold Mining Company, informed its subscribers that Pond had treated ore from the Bonanza using this process, and that it had an option to purchase his mill. It did not state how successful the

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<sup>288</sup> 'Old Waiorongomai. A Visit to the Field. Bendigo Mine', *Te Aroha News*, 7 January 1931, p. 5.

<sup>289</sup> See chapter on prospectors and investors in the 1930s.

<sup>290</sup> Thomas Stewart to Minister of Mines, [no date given; received 27 February 1931], Mines Department, MD 1, 6/61, ANZ-W.

<sup>291</sup> Warden's Court, *Te Aroha News*, 7 December 1931, p. 1.

<sup>292</sup> Les Hill, interview with David Bettison, 13 June 1975.

<sup>293</sup> Cutting from *Evening Post* (Wellington), 8 April 1932, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>294</sup> J.A. Pond to Secretary, Waiorongomai Gold Mines Ltd, 21 August 1933, Prospectus of Waiorongomai Gold Mines Ltd, p. 5, Company Files, BADZ 5181, box 695 no. 4544, ANZ-A.

<sup>295</sup> Prospectus of Waiorongomai Gold Mines Ltd, p. 4, Company Files, BADZ 5181, box 695 no. 4544, ANZ-A.

treatment had been, nor whether this plant had been used;<sup>296</sup> it was more likely that Pond did the testing in his Auckland laboratory. In March 1936, this company planned to raise capital in England to recondition and modernize the ‘present small battery’.<sup>297</sup> After this company collapsed,<sup>298</sup> no one else indicated any interest in the battery.

### THE FINAL FATE OF THE BATTERY

Eric Coppard, who as a teenager worked for South Pacific Mines and later for Norpac, visited the site in 1962, to find

Only the remains of it, the whole Battery had actually been pulled down and had gone away. What we had been told was that it was still owned by a gentleman in Auckland and I would assume that he probably wanted to keep it as a standing relic of the mining days of Waiorongomai but he had also been asked by another party if he would be prepared to sell it to him. His comments were that, “no,” he wouldn’t sell it, “but okay I’ll let you have first option on it if I ever do.” Now the gentleman who wanted to buy the battery happened to come down to Te Aroha one day or was coming through Te Aroha and he saw two or three truckloads – in fact he passed them on the road – truckloads of old pieces of mining equipment, and he had a horrible feeling that he knew where they were coming from, so he shot up Waiorongomai and sure enough they had actually – somebody had started pulling it down, dismantling it and scrapping it.

Coppard believed the thieves would have come in on the low level track. ‘And then of course to get to the battery they would have winched everything up the side of the hill’.

So they’d smashed everything up and he was very very irate obviously that this gentleman had given him first option and so a gentleman’s agreement on it. He got back and he got on the phone, rang up the owner of it and wanted to know what was the game, and this was the first that the owner knew that it had happened.

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<sup>296</sup> Annual Report of Waiorongomai Gold Mining Company, 30 September 1935, Eric Coppard Papers, Waihi.

<sup>297</sup> Te Aroha Warden’s Court, Mining Applications 1936, 5-7/1936, BCDG 11288/10a, ANZ-A.

<sup>298</sup> See paper on company formation in the 1930s.

The consequence was that in 1962

there was nothing really left of battery except one little wooden room which possibly was a little office or a little lunch room. That was all that was there. The mortar boxes – there were two mortar boxes there – one was lying on the ground ... and one is still actually standing ... on its little parapet.<sup>299</sup>

Les Hill recalled that ‘a bloke moved in and wrecked the battery with explosives. He was caught. The court hearing said to be in Rotorua. Given two years’ gaol’.<sup>300</sup> Although some of the details were inaccurate, that it was recalled 25 years later indicates the excitement caused.

A sale had indeed been arranged. After Pond died in June 1941, the trustees of his estate surrendered the battery site because they saw little chance of selling it.<sup>301</sup> In April 1943, one of them, Frederick Charles Carr, an accountant and land agent,<sup>302</sup> informed the Mines Department that there was now such a chance and asked whether the site could be returned to them.<sup>303</sup> Carr had previously tried to sell it to Malcolm Hardy, unsuccessfully.<sup>304</sup> Asked for his opinion, the mining inspector reported that he had just formally seized the buildings and plant.

The plant consists of a small, old type stone crusher, 10 heads of stamps, 2 mortar boxes, 2 berdans, 8 cyanide tanks and some piping of assorted sizes, together with shafting, one or two antiquated pumps, and a number of solid pulleys. The berdans, stamps, and shafting are the only items of plant worth consideration, and the former two can only be regarded as scrap metal. However, the buildings have real value, as they are built of corrugated iron on a wooden frame....

All the iron, with the exception of some on the roof of the main building, which is rusted, can be classed as second grade....

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<sup>299</sup> Eric Coppard, interview at Waihi, 4 August 1985, pp. 44-45 of transcript.

<sup>300</sup> Les Hill, interview with David Bettison, 13 June 1975.

<sup>301</sup> F.C. Carr to Under-Secretary, Mines Department, 16 April 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>302</sup> Probates, BBAE 1570, 517/41, ANZ-A.

<sup>303</sup> F.C. Carr to Under-Secretary, Mines Department, 16 April 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>304</sup> F.C. Carr to Under-Secretary, Mines Department, 26 May 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

The plant and buildings are situated two miles up the bed of Waiorongomai Creek. I travelled up the creek bed when inspecting same, as the track giving access thereto has fallen away in places and is badly overgrown with scrub and gorse. I estimate that it would cost £100 to restore the track and £50 to erect a winch and lay a tramway from the track to the battery, which is on the downhill side thereof. This is the only means whereby the plant can be removed.

It is difficult to place a value on both buildings and plant, but I would say they would be worth £500 in position, or roughly £100 to any person desiring to purchase them for removal.

He understood that the trustees had received an offer for £25, but recommended that the battery be advertised for sale.<sup>305</sup> The previous day, Andrew Neil Compton of Coromandel offered the department £50.<sup>306</sup> His offer was not accepted, the under-secretary considering it was reasonable for the trustees to make another attempt to sell it.<sup>307</sup> Compton did purchase it from the trustees for an undisclosed sum, and planned to remove it over summer.<sup>308</sup> Reginald Carlton Allen, a Waitoa farmer,<sup>309</sup> who wanted to purchase part of the battery, was informed in September 1947 that it was already sold.<sup>310</sup>

As the battery was not removed immediately, it was vulnerable. In April 1950, a field inspector for the Lands and Survey Department visiting the site saw it 'being removed by W.S. Reed & Co Ltd, Morrinsville, who have a contract for the salvage from the Mines Department'.<sup>311</sup> Another official noted on this report that the battery belonged to Compton, who had

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<sup>305</sup> E.J. Scoble (Inspector of Mines) to Under-Secretary, Mines Department, 29 April 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>306</sup> A.N. Compton to Mines Department, 28 April 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>307</sup> Memorandum by Under-Secretary, Mines Department, 2 June 1943, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>308</sup> A.N. Compton to Mines Department, n.d. [June 1943], Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>309</sup> See *Piako Electoral Roll, 1946*, p. 3.

<sup>310</sup> Under-Secretary, Mines Department, 4 September 1947, Mines Department, MD 1, 10/7/23, ANZ-W.

<sup>311</sup> G. Mulligan (Field Inspector, Lands and Survey Department) to Commissioner of Crown Lands, Auckland, 20 April 1950, Lands and Survey Department, Hamilton, 8/857, DOSLI, Hamilton.

‘shown police receipts’.<sup>312</sup> The upshot was that William Sayle Reed, a contractor who had earlier wanted to salvage the tramway and been refused, was charged in September with theft of ‘a mining battery and equipment known as Pond’s battery (comprising three buildings, four baulks of kauri timber, about four tons of assorted steel shafting, 1000 feet of assorted galvanised piping, a union crusher) and other mining equipment, of a total value of £1000’, between 17 January and 21 March. Compton, a demolition contractor of Auckland, told the court that he had intended to dismantle it and salvage the material.

He had not demolished it. Apart from the effect of a few acts of vandalism it was complete in 1948. He had arranged with a farmer to keep an eye on it. On July 12, 1950, he found the battery had been almost completely demolished. Most of the materials of value had been taken away.

The main building was 30ft wide by 60ft long and there were two smaller buildings 30ft by 20ft. There were 1000 sheets of galvanised iron and 25,000 superficial feet of timber. The main building was full of mining machinery.

On August 23, witness visited a machinery exchange at Hamilton and saw parts of a crusher similar to the one removed from the battery.

At Morrinsville shops he inspected sheets of galvanised iron, steel shafting and pipes which were similar to those removed from the battery.

Witness said the value to him of the battery as it stood was £2000. Against this would have been the expense of removing it. He said he could have made £1000 out of it.

A mechanic who worked in Reed’s joinery factory gave evidence that he had assisted others to remove the battery. ‘As far as he could remember he was told that accused had received it from the mining authority’. The materials were taken to Reed’s yard at Morrinsville, some timber was transferred to a Hamilton timber company, and a crusher was taken to a machinery exchange in Hamilton. ‘The work was done openly’. Norman Neilson, a retired miner of Waiorongomai who had spent years prospecting the district,<sup>313</sup> ‘said that Reed asked him about the Bendigo battery.

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<sup>312</sup> Memorandum by D. Blake, n.d., Lands and Survey Department, Hamilton, 8/857, DOSLI, Hamilton.

<sup>313</sup> See paper on prospectors and investors in the 1930s.

Witness referred him to the inspector of mines and told him that Compton had been at the battery previously’.

A Morrinsville company director who accepted some of the material as a way of reducing Reed’s account with him deposed that ‘Reed said he had bought the battery from a man at Coromandel’. Reed told a farmer who bought corrugated iron from him that it came ‘from a battery he had purchased at Waiorongomai’. To the policeman who had told Reed, at Rotorua, that there was a warrant for his arrest, ‘Reed said he had “never stolen anything”’, that the charge was ‘a lot of rubbish’, and ‘everybody was helping themselves’ from the abandoned property. ‘Reed said he had helped himself and sold what he had taken. There had been no secret about it’. Four days later, Reed claimed (to another policeman) that his solicitor had wrongly advised him that Compton had no title to the battery. This solicitor ‘gave evidence that Reed never asked him to make enquiries regarding the title’. Reed claimed that the county engineer, Douglas Edwin Trevarthen, ‘had helped himself to materials from the battery’. He told the police that dismantling it had cost £1,400 and that selling the materials had produced only £840.

Trevarthen stated that, ‘as a result of information’ about people stealing tramway rails, he had inspected it in March. Reed introduced himself ‘on the roadway at the mouth of the valley. Two men were working horses, sledging material down to the road’. Their conversation was about the rails, and Trevarthen neither went to the battery nor took material from it. ‘He had last visited the site in 1949 when it was in a dilapidated state, but with a lot of materials still there. The main battery buildings were standing’.

Reed was committed for trial at the Supreme Court.<sup>314</sup> At this hearing, the Crown stated that he removed the equipment ‘in an extensive way with trucks and bulldozers. There was no secrecy in the removal’. Compton gave evidence that after purchasing the property by tender he ‘visited the site on several occasions from 1943 to 1948’, in the latter year seeing ‘some vandalism and a little theft. The only protection for the plant was its inaccessibility. Access would require about a mile and a half of roading to be put in’. When he visited in May 1950 ‘everything of value had been taken. An access road had been put in. Among the equipment removed was the galvanised iron, all the heavy timber, about four tons of steel shafting, the union crusher and piping’. One of those involved in the demolition said that

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<sup>314</sup> *Te Aroha News*, 29 September 1950, p. 5.

six men had worked on this, 'returning each evening to Morrinsville'. It was commonly known that the demolition was taking place, 'and there had been people up to the site while they had been working'. After about three hours, the jury found Reed guilty.<sup>315</sup>

In an effort to reduce the penalty, Reed's solicitor stated that the 'true or realizable value of the stolen property was about £78 and not £1,000. Reed had lost a considerable amount of money over the venture'.<sup>316</sup>

It was extraordinary that a man of Reed's business and legal experience should have deliberately walked in to someone's property, pulled it to pieces, carted it out and sold it. Conduct of that kind could not be allowed, and it was essential that a salutary punishment be inflicted, said His Honour.

His Honour said he had taken into consideration what counsel had said on prisoner's behalf and something could be said for the view that this was not the profitable adventure Reed had anticipated it was going to be. His Honour would not deal with the matter on the basis of £1000 but as something very much less. However, it was obviously the property of someone and Reed had no right to interfere.

He imposed 12 months' hard labour.<sup>317</sup>

## CONCLUSION

The last battery to be erected at Waiorongomai had an ignominious history, for which the quality of the ore rather than the treatment processes experimented with should take the main blame. If the ore was too low to be payable, no amount of testing and experiments by under-capitalized companies and syndicates could work. And its ultimate fate was to be stolen!

### *Appendix*

*Figure 1: Plan of 'Water Race Waiorongomai Stm Applied for by The Bendigo Gold Mining Company Limited', 20 July 1909, Te Aroha Warden's Court, Mining Applications 1909, 115/1909, BBAV 11289/21a, ANZ-A*

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<sup>315</sup> *Te Aroha News*, 14 November 1950, p. 5.

<sup>316</sup> *Te Aroha News*, 17 November 1950, p. 5.

<sup>317</sup> *Waikato Times*, 14 November 1950, p. 6.

[Archives New Zealand/Te Rua Mahara o te Kawanatanga, Auckland Regional Office]; used with permission.

*Figure 2:* W.J. Belcher, 'Goldmining in New Zealand: The building of the new Bendigo Battery, near Te Aroha, Auckland', *Auckland Weekly News*, 1 September 1910, Supplement, p. 3, AWNS-19100901-3-3, Sir George Grey Special Collections, Auckland Libraries; used with permission.

*Figure 3:* J.S. Hill, Bendigo Battery, n.d. [c. 1914], Eric Hill Collection.

*Figure 4:* Eric Hill, cyanide tanks at Bendigo Battery, 1960, Eric Hill Collection.

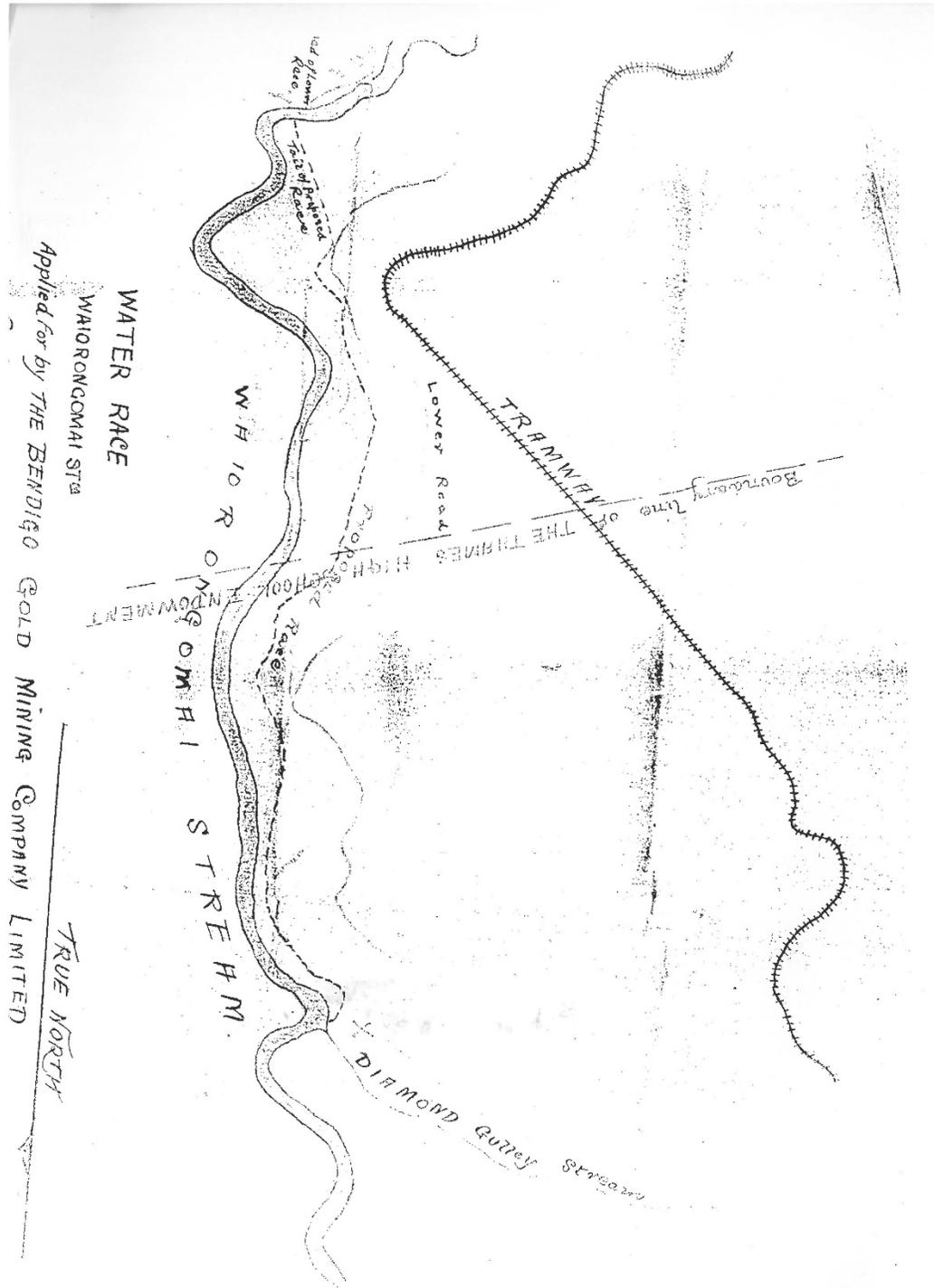
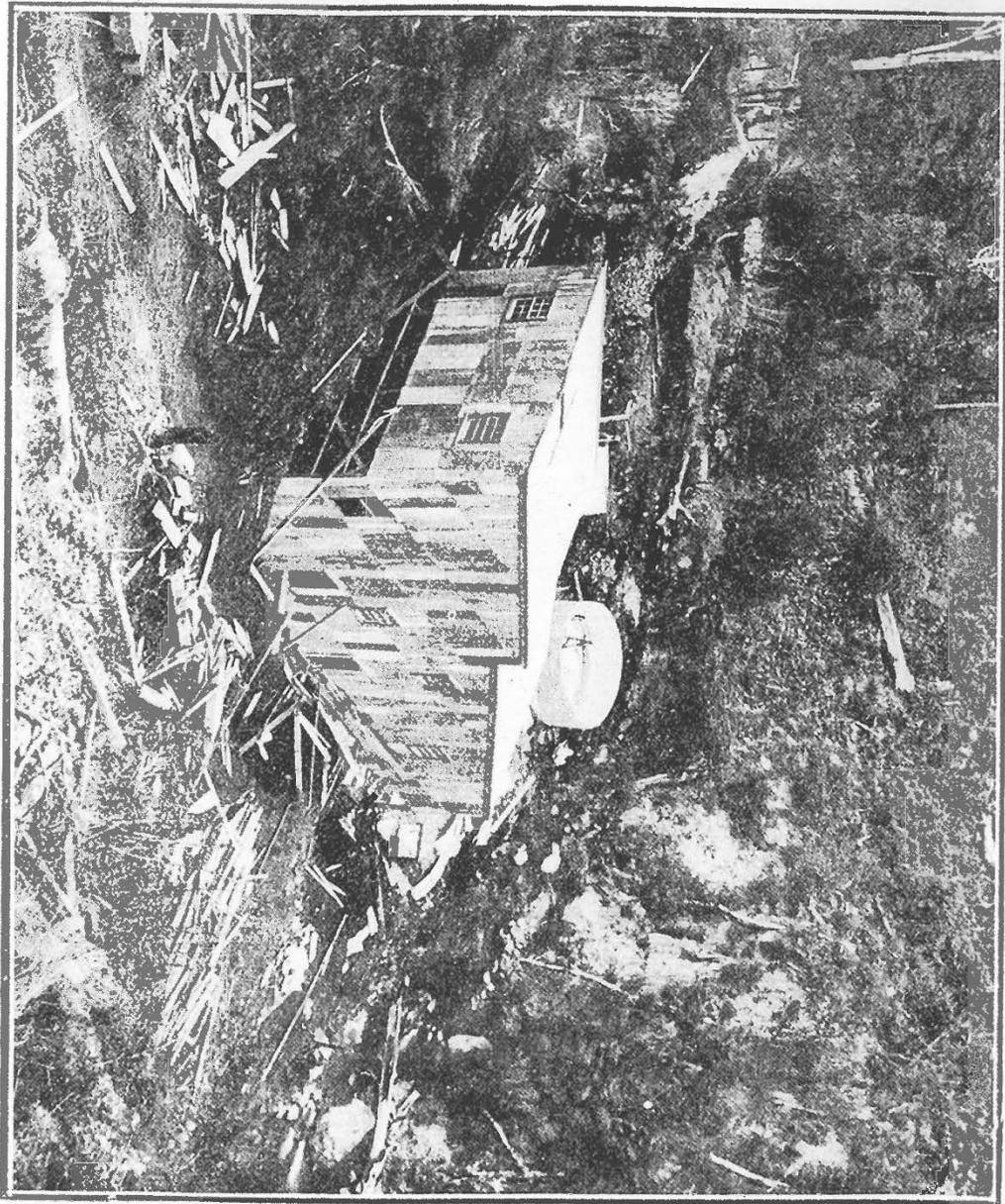


Figure 1: Plan of 'Water Race Waiorongomai Stm Applied for by The Bendigo Gold Mining Company Limited', 20 July 1909, Te Aroha Warden's Court, Mining Applications 1909, 115/1909, BBAV 11289/21a, ANZ-A [Archives New Zealand/Te Rua Mahara o te Kawanatanga, Auckland Regional Office]; used with permission.



GOLDMINING IN NEW ZEALAND: THE BUILDING OF THE NEW BENDIGO  
BATTERY, NEAR TE AROHA, AUCKLAND. W. J. Belcher, Photo.

*Figure 2:* W.J. Belcher, 'Goldmining in New Zealand: The building of the new Bendigo Battery, near Te Aroha, Auckland', *Auckland Weekly News*, 1 September 1910, Supplement, p. 3, AWNS-19100901-3-3, Sir George Grey Special Collections, Auckland Libraries; used with permission.



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