

Resource Community Formation & Change:

A Case Study of

WAIHI

By

Gerard Fitzgerald

Working Paper 9

Taylor Baines & Associates

August 1998

ISSN 1176-3515

CONTENTS

Introduction	1
The Mining Sector	1
Gold mining	1
The Gold Mining Industry of the Waihi Area	2
Waihi and Martha Hill	2
Waitekauri, Golden Cross and Waikino	4
The New Gold Boom	4
The Resource	6
Gold And Silver Production	6
Future of the Local Gold Mining Industry	6
The Gold and Silver Price	7
Social and Economic Profile of Waihi	7
Demographic and socio-economic characteristics	11
Industry, Work and Occupations	14
The role of the state	14
The local industry	15
The culture of gold mining	15
The organisation of work	17
Mining Work Today	18
Characteristics of the Workforce	19
Regional and Local Economy	20
Businesses	22
Physical and Social infrastructure	23
Physical Infrastructure	23
Transport	24
Housing and Property	25
Education	27
Training	28
Health	29
Government agencies, and services provided by voluntary organisations	29
Community Organisation	30
Local government	30
Industry as citizen	30
Culture, Class and Conflict	31
Community Organisations	32
Social problems	33
Maori	34
Women, young people and the elderly	34
The Future	35
Conclusion	36
References	37

INTRODUCTION

This paper reports the findings of a case study of Waihi in the North Island of New Zealand. It is one of a series of three case studies of mining communities in New Zealand which are part of a project entitled "Resource Community Formation and Change" that has been funded by the Foundation for Research, Science and Technology. The other two case studies of mining communities in this series are Rununga, situated in a coal mining area on the West Coast of the South Island (WP 10), and Ohai (WP 11) in western Southland. Additional Bay of Plenty case studies include the forestry communities of Karawau (WP 6) and Murupara (WP 7), and the agricultural town Katikati (WP 12).

A variety of research methods were used in this case study which focuses on changes in Waihi and the surrounding district over the past 20 or so years. These methods included an analysis of census statistics, a review of published and unpublished documents about the town and the mining sector, and four days of interviews in and around Waihi in November 1997.

THE MINING SECTOR

The following description of mining and quarrying in New Zealand has been based on an earlier working paper which examined the regional, national and international trends and linkages of the sector in New Zealand from the early 1970's to the present (Fitzgerald, 1997).

The sector comprises 0.3 per cent of New Zealand enterprises (652) and 0.3 per cent of employment. Enterprises in this sector have an average of just over seven workers compared with just under six workers for all sectors combined. Mining and quarrying accounts for a slowly increasing proportion of GDP; from 1.2 per cent in the 1987/88 year to 1.8 per cent in the 1992/93 year. By 1995 the sector employed 4,500 people (3,800 males and 700 females), with the vast majority of them (91 per cent) working for private enterprises.

The regional significance of the mining and quarrying sector varies enormously in terms of both numbers of enterprises and the level of employment. Regions where the sector makes an important contribution to the economy are the West Coast (coal and alluvial gold mining), Taranaki (oil and gas), and Waikato (coal and gold).

Gold mining

Total world mine production of gold is around 2500 tonnes per annum (Press, 17/11/98). In 1995 NZ produced 12.1 tonnes of gold and 27.8 tonnes of silver or approximately 427,000 oz and 981,000 oz respectively (Statistics NZ, 1997). Most of the gold is produced from three major hard rock mines - Martha Hill in Waihi, Golden Cross near Waihi, and the Macraes Gold mine in Otago. Between them they produced about 80 per cent of the gold, while the alluvial mining industry on the West Coast and in Otago produced the balance. The two Waihi mines produced 50 per cent of the gold and almost all of the silver in 1993.

According to a 1994 review of the impact of gold and silver mining on the NZ economy, gold and silver production in 1993 was worth NZ\$250 million and the industry employed the equivalent of 1002 full time workers (Wheeler Campbell, 1994). Nearly two fifths of these positions were at the two mines at Waihi. This contrasts with ten years earlier when gold and silver production, all from alluvial sources, was worth only \$6.13 million, and provided the equivalent of 140 full-time jobs - none of which were in the Waihi area.

Figure 1



By the 1960s hard rock mining and most of the large dredging operations from the earlier phase of mining had ceased and the industry went into a quiet phase until the 1980s when investments in alluvial and hardrock mining, made as a result of sustained high gold prices, began to bear fruit (Figure 1). Gold production rose dramatically between 1988 and 1992 as the new large open cut mines came on stream, and as alluvial gold production reached its peak on the West Coast. In 1986 and 1987, West Coast alluvial gold mining provided the equivalent of 500 full-time positions but by 1993 this had fallen to 320.

Nowadays, approximately 90 per cent of New Zealand's gold and silver production is exported to Australia where bullion refining facilities are located.

THE GOLD MINING INDUSTRY OF THE WAIHI AREA

Gold mining in the Ohinemuri/Hauraki district was begun in the late 1870s as hard rock underground mining by small companies or individual parties using relatively unsophisticated methods for extracting and for processing the gold and silver-bearing ores. These mines centred on the quartz deposits in the Karangahake Gorge, the nearby Waitekauri Valley, and on Martha Hill at what is now Waihi.

Waihi and Martha Hill

In the earliest years, the mines around Waihi were small, and their owners had to cope with low returns from the ores they crushed, having only very inefficient gold and silver extraction methods at their disposal. It quickly became clear that mining at Waihi required significant capital for infrastructure, exploration and development, and ore-processing technology. By 1890 this investment had begun to occur and the variety of small operations were bought up by British companies over the following decade. Among these mining corporations were the Waihi Gold Mining Company (WGMC), founded in London in 1887, and the Waihi Grand Junction Company founded in the mid 1890s and initially New Zealand owned.

These companies were particularly interested in the main quartz reefs on Martha Hill. The capitalist and politician T.H. Russell purchased the original Martha Mine and its promising quartz reefs in 1890 and on-sold it to the WGMC which he had established. Russell had a good eye for an investment,

having already been party to the establishment of NZ Insurance Company, and the Bank of New Zealand. As a politician in parliament, he lobbied for and secured the right of the private sector to acquire and deal in Maori land. As Minister of Defence in the 1860s, he was instrumental in, and personally benefited from, the confiscation of the Waikato from its Maori owners. He also had interests in the Thames goldfields (Roche, 1982).

Under Russell, in England the company raised the capital needed to exploit the mineral resource, including the development of more effective gold extraction processes, and the necessary heavy machinery and engines. As its enterprise developed, the WGMC adopted novel technologies such as the Cassel cyanide processes for extracting gold and silver from ores, and compressed air rock drills, and helped establish much of the district's transport infrastructure, including a road and railway through the Karangahake Gorge. Later it pioneered the use of electricity and built the first hydro-electric power station on the Waikato river.

Gold mining, and the town of Waihi, developed rapidly in the first decade of this century and the Martha Mine in particular expanded dramatically in production, workforce and profits as new ore bodies were discovered. This development continued and in 1909, as McAra (1988) notes, the Martha Mine alone produced approximately 421,000 tonnes of gold and silver-bearing ore valued at nearly £960,000 - making it among the world's biggest precious metal producers at the time, and the biggest gold mine in Australasia. In these boom years the WGMC paid huge annual dividends to shareholders - sometimes approaching the value of the capital itself. In 1911 when underground mining was still in full swing, but around the time when it was realised that the best and the easiest of the ore resource was running out, the Martha Mine employed over 1,500 workers and the adjacent Grand Junction Mine employed 400. Despite industrial relations problems, increasing costs, and uncertainties about the life of resource, the WGMC continued to locate and exploit the mineral resources of Martha Hill, provide employment for 600 or so workers, and generate good returns for its shareholders for another 40 years.

The Grand Junction company exhausted its best ore resources in the late 1910s, and after spending considerable sums on exploration at the northern end of Martha Hill, ceased operations in 1923 and dismissed most of its 381 workers. Its mining claims passed to the neighbouring and larger WGMC, which itself restructured in 1935 creating a subsidiary -the Martha Company - to run its Waihi mining operations, thereby avoiding new gold taxes imposed on companies that had paid out more in dividends than their authorised capital. From the post World War I period until the closure of the mine in 1952, the WGMC company essentially ran the Waihi operation as a cash cow, cut back investment in mine development, technology, infrastructure, and ignored the needs of the town itself. When the Martha mine closed in 1952 it was due to the increasing cost of mining, exacerbated by the obsolescence of the methods and machinery used, the low world fixed price of gold, the exhaustion of accessible high-grade ore, and a failure to attract skilled labour. As Silcock notes

“it appears that a company which had been one of the most innovative and efficient in the world had adopted an un-enterprising and apathetic mentality content to met the short term goals of paying annual dividends to the shareholders but giving no real thought to ways in which the life of the mine could be extended” (1990, p5).

During the course of its first life, the Martha Mine produced 174,000 kg of gold and 1,200,000 kg of silver from 12 million tonnes of ore almost entirely obtained from underground mining. Between 1890 and 1922, when it closed, the neighbouring Waihi Grand Junction Company's mine had also 61,100 kg of gold and silver from about 1.12 million tonnes of ore.

Waitekauri, Golden Cross and Waikino

Gold was first mined in the Waitekauri Valley in 1875 in what was known as the Waitekauri claim, and in 1892 gum diggers discovered gold at Golden Cross, in the upper Waitekauri River. Small underground workings on the Golden Cross Claim were developed, however, as with other small mines, considerable capital was needed to fully exploit the mineral resource, and the operation was sold to T. Russell in 1893 (the buyer of the Martha Mine and the founder of the Waihi Gold Mining Company). Russell formed the Auckland-based Golden Cross NL Mining Company which developed access to the site and established ore processing facilities. In 1895 the mine, along with other claims in the valley, was bought by the British owned Waitekauri Gold Mining Company. It operated until 1905 when it surrendered its claims, and from then until 1917, when mining activity ceased altogether, the claim was worked sporadically by a new company (the Golden Cross Gold Mining Company Ltd). During their lives, the Golden Cross underground mines produced nearly 11,000 kg of gold and silver from 160,000 tonnes of ore, with the Golden Cross mining settlement in the Waitekauri Valley achieving a temporary population of up to 400, with shops, a school and hotel (Cyprus Minerals, 1987; Barber, 1985)

At the same time the mining village of Waikino to the south of Waitekauri and beside the Ohinemuri river was established as a residential settlement for miners and for the 200 or so workers employed at the WGMC's Victoria Battery - the large processing plant established in about 1900. This processing plant operated until the early 1950s and the village of Waikino remained.

The New Gold Boom

In the 1970s, a new round of gold exploration in New Zealand began with particular attention being paid to old gold mines. These investigations came about in response to dramatic rises in the international gold price, and technological developments in mining and processing. In mining, total extraction of the ore resource - using open cast mining, became common, and in processing new methods and materials enabled extraction of gold from very low grade ores - ores that were previously deemed uneconomic. In 1976 Mineral Resources Ltd. began investigating Martha Hill's potential for further mining. However the experience, capital and technological know-how for developing and planning a large modern hard rock gold mine was not available in New Zealand at the time. As happened 80 years earlier, a major overseas company, in this case Amax of America, was brought in. Amax acquired the majority stake in the Martha Hill joint venture to prospect and then exploit the resource. The joint venture participants, which had 58.67 per cent NZ ownership at the time, were

- Amax Exploration NZ Ltd, a wholly owned subsidiary of an the American company Amax Inc, (38.3% share),
 - Mineral Resources NZ Ltd, a New Zealand listed public company (27%)
 - Green & McCahill Mining Ltd, a subsidiary of Green & McCahill Industries Ltd - a New Zealand private company, (16.7%)
 - Goodman Mining Ltd, a wholly owned subsidiary of the publicly-listed Goodman Group, (15%), and
 - United Gold Mines Ltd, a subsidiary of Barclays International, a British finance house, (3%).
- (Waihi Gold Company, 1985, p2-1)

Prospecting work led to the development in Waihi of Radial Drillers and later Aalton Drillers - specialist core sampling drillers. This prospecting showed that NZ\$600 million worth of gold and silver, based on prices at the time, lay within Martha Hill. Following the preparation of an environmental impact assessment and application for a mining licence, the Planning Tribunal heard the

application in early 1987. In July that year a mining licence was granted subject to various conditions. The joint venture company then restructured into the Waihi Gold Mining Company Ltd consisting of:

- Amax Gold Mines (NZ) Ltd;
- AUAG Resources Ltd, formed out of Mineral Resources;
- Welcome Gold Mines Ltd, an Australian company
- Goodman Mining Ltd.

Following an 18 month construction programme, the current Martha Hill Mine, a large open cast mine covering 25 hectares, with a waste and tailing disposal site of 160 ha, was opened in June 1988. A series of further name and ownership changes have subsequently occurred with control of the joint venture mining shifting into the hands of an Australian Company, Normandy Mining. Operating under the name of the Waihi Gold Company again, the formal structure of the joint venture at the end of 1997 was:

- Waihi Mines Ltd (28.35% share), wholly owned by Normandy Mining Ltd of Australia;
- Welcome Gold Mines Ltd (28.35% share), also owned by Normandy Mining;
- AUAG Resources Ltd (27.84% share), owned by Otter Gold Mines Ltd, an Australian listed company (and formerly Mineral Resources);
- Martha Mining Ltd (15.46% share), which is two thirds owned by Normandy, and one third by Otter.

Normandy Mining and Otter Gold Mines also have equal shares in the Union Hill Joint Venture which has been prospecting the nearby Gladstone Hill.

At the same time the Martha Mine was being investigated by Amax, Amoco, another large American mining and oil company, began gold exploration over the southern part of the Coromandel Peninsula. This led to a prospecting licence being granted in 1980, and detailed site investigations, drilling and mapping in 1985 (costing \$8 million and employing up to 60 people). In 1987 Cyprus Minerals NZ Ltd (the renamed Amoco) applied on behalf of a joint venture, for mining consents, which were granted subject to conditions and bonds, and the new Golden Cross mine, which involved a \$100 million investment by the partners, was opened in 1990.

The Golden Cross Joint Venture consisted of two shareholders:

- Cyprus Minerals NZ Ltd (80% share), a wholly owned subsidiary of Cyprus Minerals of Colorado, USA (the minerals subsidiary of Standard Oil - also known as Amoco); and
- The Viking Mining Company Ltd (20% share), a wholly owned subsidiary of the Todd Corporation of NZ.

In May 1993, Coeur d'Alene Mines Corporation, from Idaho, purchased Amoco/Cyprus Gold's stake in the Golden Cross Mine for a reported \$60 million and took over running the mine (Mcmanus, 1993). However in 1995, Coeur detected movement in its tailings dam - caused by instability in the underlying geological structures. This precipitated expensive investigations, remedial tunnelling, earthmoving, and drainage work. Coeur also initiated legal action against Cyprus over the undeclared condition of the tailings dam at the time of the sale. In December 1997, after an initial round of layoffs, unplanned engineering expenditure, and low gold prices, Coeur wound down and eventually closed the Golden Cross mine

The Resource

Exploratory drilling carried out by the Waihi Gold joint venture put the ore reserve of Martha Hill at 7.84 million tonnes with an average grade of 2.9 grams of gold and 28 grams of silver per tonne. These grades were somewhat lower than those in the previous round of corporate mining during which the best ores were worked out. In addition, with opencast mining, a further 28.7 million tonnes of waste rock (essentially the contents of Martha Hill to a depth of 100m) was expected to be dug up and disposed of in waste dumps on local farmland (Waihi Gold Company, 1985).

At Golden Cross, Cyprus Minerals estimated the resource, contained in 3 zones of mineralisation, to be 5.6 million tonnes of ore, containing approximately 30,400 kg of gold and 91,000 kg of silver. They planned to open cast mine part of the site (producing 2.3 million tonnes of ore) for 8 years, and have two underground mines (producing 3.3 million tonnes of ore) operating over 10 years. 4.4 million cubic metres of waste rock, and over 5 million tonnes of tailings, were expected to be generated from mining and processing activities, most to be disposed of in a large tailings dam at the head of the valley. Open pit mining was expected to last until early 1998, and underground mining until 2000 (Cyprus Minerals, 1987). However production actually ceased in December 1997.

Gold And Silver Production

Total production of the reopened Martha Mine from 1988 to the middle of 1997, was 19.4 tonnes (685,000 oz) of gold and 99 tonnes (3.5 million oz) of silver. In the 1996/97 year alone, the Mine produced 2.34 tonnes (82,722 oz) of gold, and 17.58 tonnes (620,100 oz) of silver, with operating costs of NZ\$358 per oz of gold, giving an approximate return of NZ\$26.1 million. This 1996/97 gold and silver production also meant an associated production of 872,000 tonnes of waste rock, and nearly 1 million tonnes of ore from the open cut - indicating an approximate 1:1 ratio of ore to waste. In previous years this ratio was 3:1 with upwards of 3 million tonnes of waste rock being produced annually (Otter Gold, 1997).

Annual production of gold from Golden Cross has been in the order of 2.5 tonnes per annum - or similar to that for the Martha Mine. In the 1995 calendar year the Golden Cross mine had their biggest year since 1991, producing 2.94 tonnes (103,800 oz) of gold and 10.2 tonnes of silver (360,000 oz), with a production cost of \$413 per oz of gold. Approximately 60% of the production came from the underground workings (Coeur Gold, pers com, 1997)

Future of the Local Gold Mining Industry

As of 1997, the remaining ore reserves on Martha Hill were expected to enable a further 3.5 years of production, i.e., until 2001. The Waihi Gold Company has sought resource consents to extend its Martha Hill mine and processing facilities. The proposed extension of the open pit contains an additional estimated resource of 7.5 million tonnes of ore at a grade of 3.3 gm. of gold per tonne. This would extend the life of the mine until 2007, and produce a further 24 tonnes (or 850,000 oz) of gold (Waihi Gold Co., 1997).

Prior to the Golden Cross closure Coeur Gold had lobbied government to be able to carry out exploration on lands within the DOC estate in the vicinity of the mine, in the belief that additional mineral resources exist there.

In addition to the expansion of the Martha Mine, further mineral resources in the vicinity of Martha Hill have been identified. According to the 1997 Annual Report of Otter Gold Mines, drilling exploration on Gladstone Hill has indicated "the existence of a high grade ore... the prospects of Gladstone Hill

producing additional ore for the Martha Hill [processing] plant are considered to be excellent” (1997: 6). Local conservation groups believe that the capacities of the proposed expanded processing plant and waste disposal area are beyond the requirements of the Martha Mine alone, and therefore indicate unannounced plans to mine Gladstone Hill at some stage in the future.

Gold prospecting continues to occur in the district, for example Heritage Mining have prospecting a 3,600 ha area between the Waitekauri Valley and Waihi, taking in the Waihi town water supply catchment. Much of the district is covered by prospecting licences, and has been so for 15 years or so.

The Gold and Silver Price

Between 1934 and 1968 the international gold price was directly tied to the American dollar at US\$35/oz. After international price controls were removed and the American public were able to buy gold as a private investment, there were huge increases in the price, especially between 1971 and 1980. In January 1980, speculation pushed the gold price to US\$850/oz, however within months it dropped to around US \$470/oz. In the mid 1980s, when decisions on a new round of mining at Waihi were being taken in overseas and NZ boardrooms, the price of gold was around US\$300 or NZ\$650/oz. The price rose again and eventually reached around US\$480/oz in early 1988. Between 1989 and 1997, the price varied mostly between US\$370 and \$400, though throughout 1997/98 it dropped, going below US\$280 (The Privateer Market Letter, 1998). The recent falls in the international gold price caused the closure of some South African and Australian mines, though the largest of the NZ mines have been protected through forward selling, and reportedly low operating costs. The low gold price was probably a significant factor in Coeur's decision to close the Golden Cross mine at Waitekauri.

SOCIAL AND ECONOMIC PROFILE OF WAIHI

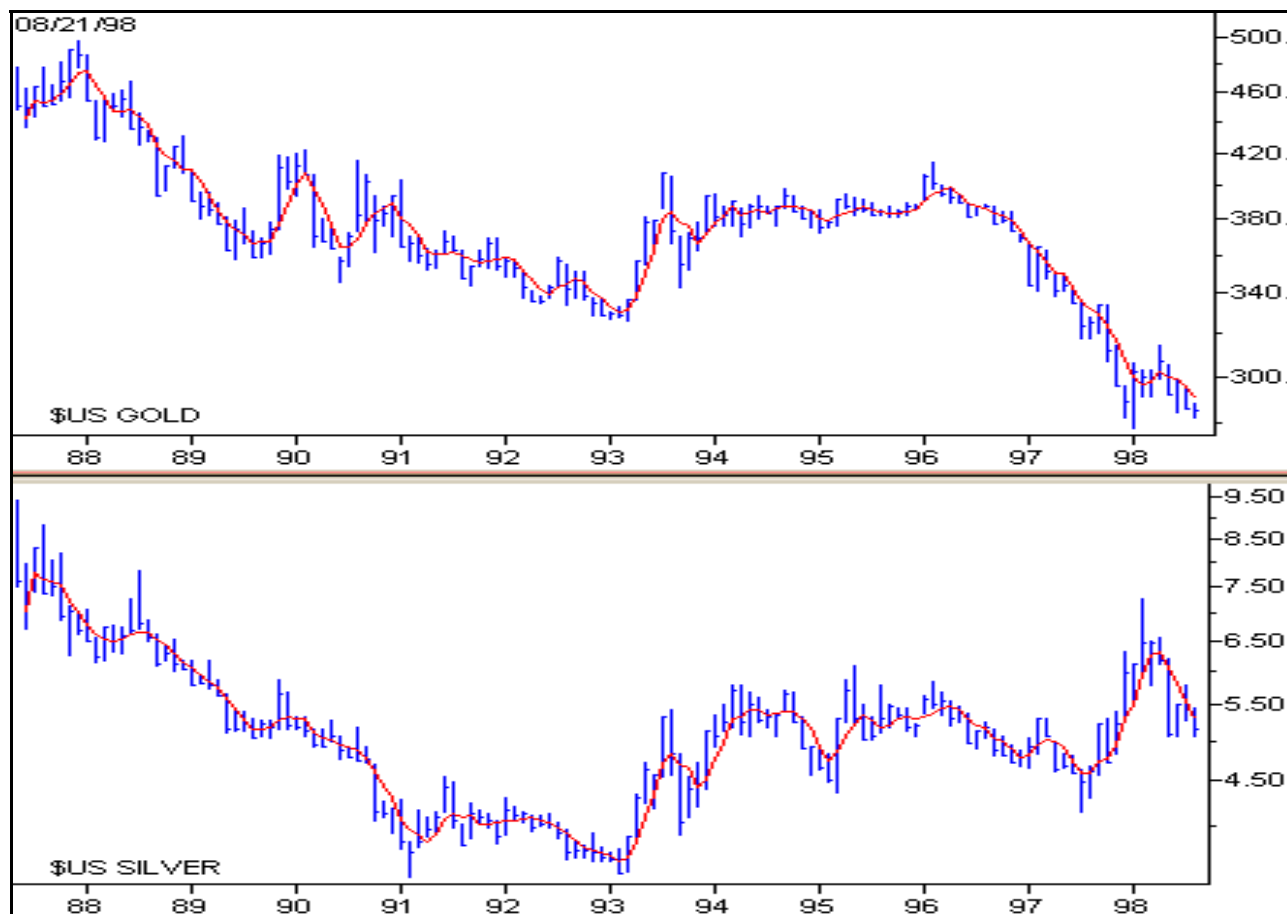
Waihi is a town of nearly 5,000 people situated at the base of the Coromandel Peninsula and at the northern end of the Bay of Plenty. State Highway 2 connecting the east coast to the Hauraki district and Auckland passes through the town, and it is the gateway to the beaches and communities of the east Coromandel coast.

Waihi began its life in the 1880s as an encampment for miners. As the mines developed, and workers were recruited from the exhausted gold fields of Thames and the Ohinemuri, the town grew rapidly. At the same time, land in the district was opened up for farming.

Over the 1890s and early 1900s Waihi went from “a tiny settlement consisting of a small public house and store situated in an infertile and depressing waste of fern and tea-tree” to the fastest growing town in the Auckland province (McAra, 1988:95), and a company town. At the height of this first corporate mining boom in 1911, Waihi had a population of 6436, and the mines employed nearly 2000 workers. The nearby community of Waikino, which was established around the gold processing mills beside the Ohinemuri River and near the mines of the Waitekauri Valley, had a population of 718.

Houses were located on sections which were officially miner's residence site licences of a half or one acre each, which enabled people to keep milking cows and grow their own food. As a result the town came to sprawl over nearly 4000 acres to accommodate its population. The term for such residence site licences was for 42 years, with a right of renewal, and the rent was five shillings per annum. When mining ended in 1952 the occupants of the licences were offered the opportunity to freehold the land for 20 times the annual rental, and at the same time Waihi Borough reduced its area to 1300 acres (ibid).

Figure 2: World Gold and Silver Prices 1987-1997



source: *The Privateer Market Letter*, 1998

The town differed from those in other New Zealand goldfields in that large companies dominated the industry and the huge profits largely went to faceless foreign principals as well as the 3,300 British and 2,000 New Zealand shareholders. In its life the Waihi Gold Mining Company managed to repay all the capital raised from its shareholders, pay out an estimated £8 million in dividends to its shareholders, and develop tin mining ventures in Malaysia (McAra, 1988). It also invested considerable revenues in mining and processing technology, and infrastructure development - e.g. the railway line through the Karangahake Gorge and the Hora Hora hydro-electricity generation dam on the Waikato (both of which were eventually sold to Government on very favourable terms). Most of the specialist hardware for mining was imported, though the WGMC eventually developed its own engineering workshop at the Victoria Battery site at Waikino. The gold companies also had to pay gold duties to the Waihi Borough Council which formed a significant proportion of the Borough's income, and in the boom period of the 1900s, gold duties constituted 71 per cent of the town's revenues. As McAra notes, this made it possible for the Council to keep the rates very low, and especially in the boom period, provide for recreational and cultural activities and amenities.

In creating wealth, the gold industry cut out the kauri forests of the district for timber and fuel, utilised the rivers and streams for water power, water supplies, and as channels for disposing of ground water from the mine and tailings, and had access to a ready supply of relatively cheap labour and compliant local and central governments.

Norman Morton in the Waihi Diamond Jubilee history says,

“ the reward was poor for those actually engaged in the work which was devoid of the romance and glamour supposed to be associated with gaining the precious metal... Mining was dirty, dangerous and unhealthy work... with the prospect of extended misery and shortened life caused by miner's phthisis (silicosis)” (1962:17).

This lung disease, common in the first 20-30 years of mining, was brought on by working in the extremely dusty environments of the early (dry process) stamping mills, and drilling operations in confined spaces in the mine. During the boom period wages were about the same as a farm labourer (£2/8/- per week) and lower than those of South Island coal miners (Roche, 1982), though according to McAra, contract miners themselves might earn twice the basic wage if production was going well.

The rhythm of life in the town and at Waikino was dictated by the shift system operated in the mines and the Victoria battery. Social stratification within the mines extended into the community and the “most important” people in the town were the mine managers, superintendents and other officials and their families, and with the professionals and established businessmen, formed a local upper class. Miners and their families fell into the working class. Morton also refers to a “strong undercurrent of religion” among miners and a sense of mutual support in difficult times (1962:17). In 1908, in a show of solidarity against the high prices of liquor at local hotels, the miners voted for alcohol prohibition, and this stayed in force in the town for 18 years.

McAra notes that in the first decade of the new century when the town was booming the community was very active, there was enthusiasm for community projects and money was available for local development.

“There were a number of halls, churches, lodges, and sports clubs, an excellent hospital, bowling and croquet greens, swimming baths, a town band, amateur theatricals, and musical groups, all being well supported” (1988, p267).

By 1909 there were 1500 miners in Waihi, and a growing concern among them over the dangers and exploitation arising from the competitive contract system. At the time there was only one miners' union, the Waihi Trades Union of Workers. In a bid to change working conditions, it de-registered itself from the existing conservative arbitration system and became affiliated to the new Federation of Labour. A subsequent mining company-initiated split of 31 workers from the union and an attempt by this group to then register itself as the official union resulted in the bitter 6 month-long Waihi strike which ended after an attack on the Union Hall by police and a strike breaking mob, resulting in the death of a miner. Some 1800 union supporters and family members were run out of town or packed up and left.

Mining eventually resumed but the industry had suffered from a loss of important skills. In addition, the richest accessible ores appeared worked out. The mines shifted to the cooperative contract system, and some miners returned to the town, though the workforce required by the industry shrank. However the WGMC continued to have good production and profits until 1952 when the mine closed.

The 1912 strike had lasting social and economic effects. Morton (1962) notes that whereas before the strike there was a lateral social division (workers/mine professionals, etc.), in the years after the strike the town was also divided “vertically”. Workers themselves were divided in their views, social and kinship relations were disrupted and factional boycotts and recriminations took place. In addition the population declined, community leaders and activists left the district and often the country, and there

was a general loss of confidence in the future. Many of the formerly active social groups disappeared or struggled on with reduced memberships. The disunity in the town was evident in the economic and social doldrums in which the town largely languished until the mine's closure.

During this long post boom/strike period Waihi became run down and very few new buildings or ventures got under way. In the face of a dwindling revenue from gold duty, the Borough's services fell into disrepair and the town lingered, on, waiting for the inevitable closure of the Martha Mine. Sleeman and Bell in their account of the Waihi Mine point out that the WGMC took little interest in local body affairs, administration or the condition of the settlement. It developed its own servicing infrastructure, and unlike Thames, seldom depended on outside engineering firms. Hence little secondary industry was established. (Sleeman, 1962). With its headquarters being in London, the Company was removed from local social realities and conditions, and given "the common interest in the welfare of the mine that it shared with the townspeople, the Company made very little voluntary contribution to the well-being of Waihi" (McAra, 1988:242).

By the late 1940s, the town had become very unattractive with the population drifting away to other project centres in the Waikato. Felix Donnelly in his account of Waihi in the early 1950s reports that there was little faith in the future of Waihi, with fears of it becoming a ghost town having a depressing social effect. As the local catholic priest, he recognised problems of lack of leadership, the retention of old conflicts and rivalries by die-hard miners, the lack of youth activities, absentee fathers, marital and relationship instability and poverty.

"For a long time the shabby houses, the overgrown avenue into the town, the unsealed streets, the neglected beach... the row of shops resembling those in a wild west town, and the empty sections (from the relocation of houses) were evidence of the spirit of the town" (Donnelly, 1982:29).

However, the worst fears did not become reality, even though there was a significant loss in population. The Waihi Plains had been transformed into productive dairy land since the 1920s and in response to the success of local dairy farming a cheese factory was established on the outskirts of Waihi in 1953. It remained in production until 1981. The Akrad Radio Corporation which was established in Waihi in 1922 also experienced success during the latter years of the Martha Mine and in 1952 Pye of Cambridge, England, bought a controlling interest. With the advent of television in New Zealand in the 1960s the company gained more strength and became the town's biggest employer (Climie, 1962, 161). Pye was eventually sold to Phillips and continued to produce electrical and electronic goods at its factory on the slopes of Martha Hill. However after downsizing from a workforce of over 300, it closed in 1986 making the remaining 170 or so workers redundant.

Locals report that in the 1950s and 60s the town became more egalitarian with older people moving into the district to retire, attracted by the cheap housing and more rural atmosphere. Those who stayed in the town regained faith in its future as light industries began to be set up to take advantage of local labour. Building also recommenced. At the same time, the Borough Council reduced its boundaries and slowly freed itself from its mining past and began to improve roading, upgrade the water supply and sewage system, and plan for the future of the town.

In the 1970s, the Waihi district became the focus for a series of music and counter-culture festivals, which, with low property prices and the attractive environment of the district and the Coromandel Peninsula, caused an influx of new, and alternative life-style residents. The "hippies" helped revive the schools, clubs and brought new cottage-based industries. Waihi therefore evolved from a mining town to a service centre for farming, light industry and more recently, horticulture and tourism.

As with rural towns all over New Zealand public sector and economic restructuring of the mid 1980s affected Waihi, and because of its agricultural and manufacturing base, the downturn was significant - at least until mining recommenced in 1987. A new round of interest in gold mining began in the late 1970s focusing on Martha Hill and at Golden Cross. An often bitter and highly political debate began about the desirability of allowing mining in the district and on the Coromandel Peninsula, and the town became split on the issue. In 1987 after 3-4 years of detailed planning and hearings, the Waihi Gold Company joint venture, led by Amax, obtained the necessary licences and consents and began an 18 month construction programme for an open-cast mine in Martha Hill. Gold and silver production from the new Martha Mine began in 1988. Construction of the Golden Cross open-cast and underground mines was initiated in 1990 and gold production began in 1992. A new gold mining boom thus began in the Waihi district and after over two decades of negative or very low population growth, the town's population began to increase at a rate well above the rest of the nation, and property prices rose. Gold mining also generated considerable sight-seeing by the growing number of tourists travelling to and from the Coromandel Peninsula and the Bay of Plenty. However two trends were evident in mining at the end of 1997 - when the remaining mineral resources were expected to begin to run out in both mines. On the one hand the American-owned Coeur Gold were in the process of closing the Golden Cross mine, as a result of physical problems with its tailings dam and low gold prices, with the loss of 160 local jobs. On the other hand the Waihi Gold Company, now predominantly owned by an Australian mining corporation, was moving ahead on plans to enlarge the Martha open-pit, increase production, and extend the life of the mine by 7 years - until 2007. These new expansion plans were generating uncertainty about the ultimate extent of mining in the town of Waihi, while at the same time providing relief that the mining boom may continue for some years to come.

Demographic and socio-economic characteristics

The population of Waihi fell significantly after the closure of the Martha Mine in 1952, and it remained static for over 20 years (Figure 3). However in the mid 1970s the population increased quite dramatically (12% in 5 years) and has continued to grow, with another strong increase between 1986 and 1991, the period in which the new Martha Hill and Golden Cross mines were established. The indications from the 1996 Census were that this growth has slowed. The official population in the 1996 census was 4,743 - though parts of the ward had been incorporated into the town for the census. Using the previous enumeration boundaries, the 1996 population stood at approximately 4500. The percentage of Maori in the population has grown rapidly - from 5% in 1971 to 14% in 1991. There was a further rapid increase in the next 5 years, and at the time of the 1996 Census, were just on 900 Maori residents of Waihi, making up 20 per cent of the population.

The populations of the adjacent communities have also grown in recent years. From 1981 to 1991 the population of Waihi Beach, a "suburb" of Waihi, grew dramatically from about 1,300 to around 1,800, or about 37 per cent, and in the next 5 years grew a further seven per cent. Over the same period the population of Waihi ward, the part of Ohinemuri District adjacent to Waihi, grew over 25 per cent.

By New Zealand standards the proportion of dependants in the town's population has been relatively high during this period due to the increasing numbers of elderly residents. This is reflected in the median age of residents, which for Waihi increased from 33 to 35 years between 1986 and 1996, In the same period the median age of Waihi Beach residents, who have traditionally been retired people, decreased from 45 to 41 indicating that increasing numbers of families have been settling there.

Residents of Waihi had a somewhat lower rate of participation in the workforce in 1991 than the national pattern. Between 1981 and 1991 the number gainfully employed in the labour force in Waihi fell by 5 per cent, however, in the next 5 years the employment situation improved, and the number

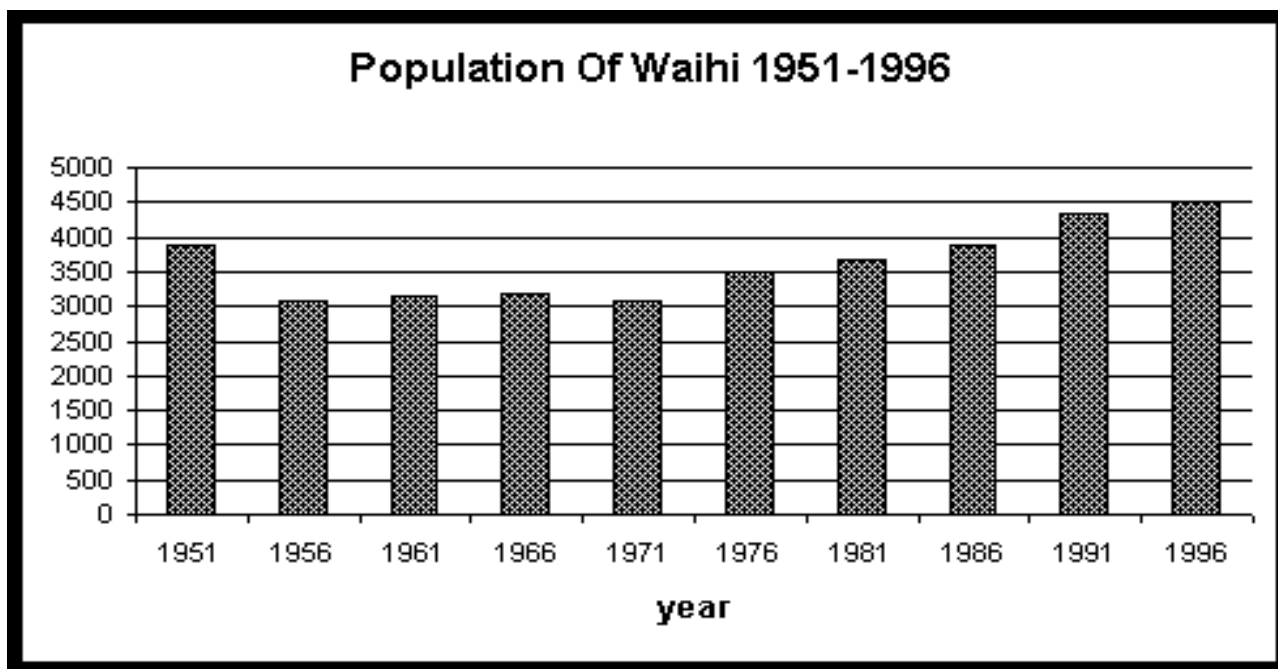
engaged in the workforce increased by 18 per cent. Two-thirds of male workers pursued blue-collar occupations in both 1971 and 1991, while female workers were engaged in a broader range of occupations.

The manufacturing sector provided over a third of employment 1971 with the wholesale/retail and social/community service sectors also providing significant sources of employment. By 1991, social and community services provided employment for a two fifths of the town's workforce, while manufacturing only provided employment for a sixth of the workers (c.f. over a third in 1971) - reflecting the closure of the Phillips factory and the loss of other small enterprises. In 1971 there was no recorded employment in mining and quarrying, but by 1991 it accounted for seven per cent of the workforce and by 1996 this had risen to nine per cent. Adjacent communities also showed increasing proportions of people engaged in mining.

Waihi's residents held proportionally fewer educational qualifications in 1991 compared with the national population, and their household incomes were generally lower than the national average. Over the last 20 years at least, the residents and households of Waihi have tended to have lower incomes than those in neighbouring communities and the rest of the country. While according to the 1996 Census results, the median household income (\$21,724) was up from 1991, the pattern of relatively low incomes continues.

In the 20 years following the closure of the Martha Mine in 1952, the number of permanent private dwellings in Waihi fell, however in the subsequent 20 years (1971-1991) it rose by nearly 60 per cent. Between 1986 and 1996 the number of dwellings continued to rise, with growth in that 10 years being about 13 per cent. Between 1951 and 1991 level of ownership by occupiers of private dwellings rose slightly, from 71 per cent to 76 per cent. Waihi Beach has traditionally been a holiday settlement, and has provided a stock of rental accommodation for residents of the Waihi district.

Figure 3:



Note: Data for the 1951 to 1971 years are for the total population and that from 1976 onwards are for the usually resident population. Changes in population from the 1976 year are calculated using data for the usually resident population as these figures for 1971 and 1976 were published in the 1976 census reports. The population given

for 1996 is based on boundaries used in 1991. Using the 1996 boundaries, the 1991 and 1996 figures were, respectively, 4,332 and 4,753.

Table 1: Highest educational qualifications held by residents of Waihi - 1991

Highest educational qualification	% of residents	
	Waihi	New Zealand
University & other tertiary	27.8	34.5
Secondary	15.5	18.8
No qualifications	42.7	30.6

Table 2: Employment status of the residents of Waihi - 1991

Area Unit	% of residents				
	Wages or Salary	Self-Employed & Employer of others	Unemployed	Full-time	Part-time
Waihi	29	7.6	9.7	38.3	9.1
New Zealand (TLA)	42.3	10.3	6.3	49.3	11.1

Table 3: Sectoral distribution of the workforce of Waihi - 1971 and 1991

Sector	1971	1991
Agriculture	3.4	6.2
Mining/quarrying	-	7.1
Manufacturing	36.3	16.3
Electricity/gas/water	1.5	1
Construction	8.6	9.1
Wholesale/retail	18.9	22.2
Transport/communications	7.6	5.2
Business/financial	3.6	8.6
Community/social	18	21.9
Total Number of Persons	1045	1221

Table 4: Occupational status of the workforce of Waihi - 1971 and 1991

Occupational category	1971		1991	
	Male %	Female %	Male %	Female %
administrators/managers	3.5	-	12.4	12.5
professionals & technicians	11.4	14.5	16.6	18.8
clerks	6.2	22.6	2.8	19.6
service/sales	15.7	31.6	6.9	24.1
agriculture & fisheries workers	4.9	-	5.5	7.1
trades workers/machine operators/elementary occupations	55.7	29.8	53.5	15.2
Total Number of Persons	713	332	651	330

Table 5: Household Incomes in Waihi - 1991

Household income	% of households	
	Waihi	New Zealand
Less than \$10,000	11.7	7.5
\$10,000 - \$30,000	48.6	34.6
\$30,000 and over	26.8	44.4

Table 6: Tenure of Dwellings in Waihi - 1951, 1971 and 1991

Form of Tenure	% of dwellings		
	1951	1971	1991
Provided rent free	5.6	3.5	2.3
Rented	23.3	17.1	20.5
Owned with a mortgage	16.9	27.5	33.5
Owned without a mortgage	54.1	49.8	42.4
Total Number of Dwellings	1079	1001	1593

INDUSTRY, WORK AND OCCUPATIONS

The role of the state

In the second part of last century government saw gold mining as an important means of economic development and encouraged prospecting and mining in the Thames Coromandel district. This was facilitated by government at the time by negotiating with Maori for access to the Ohinemuri district, which was declared a gold field in 1876. Pioneering farmers also came to the district at the same time, encouraged by cheap leasehold titles from government which were turned into freehold after 15 years. Gum diggers and loggers also came to the district.

The town grew haphazardly as a mining settlement based on various forms of mining privileges or licences, including for miners residences, and for businesses. Other mining licences provided rights to waterways for water power and for disposal of tailings. In 1885 Waihi became part of the new Ohinemuri County which was keen to facilitate mining and put few controls on development. Government provided access to adjacent kauri forests for timber and fuel, and designating some waterways as “sludge channels” for disposal of tailings. This included the Ohinemuri River which became a lifeless muddy drain carrying a quarter of a million tons of tailings each year until 1952 when the Victoria Battery closed. The resultant downstream silting of the rivers eventually prevented navigation of the Waihou River and lead to major flooding of Paeroa.

Mining legislation proved rather lenient in terms of the health and safety of workers, with the result that silicosis, a lung disease caused by inhaling quartz dust (also called “miners phthisis”) became a serious problem among the workers at Waihi’s mines and processing plants - especially up to 1914. The mining companies took little responsibility for this problem, and eventually government stepped in, levied the industry, and provided pensions and health care to affected miners and their wives.

In 1897 Government purchased the rights to the cyanide process for recovering gold and silver from quartz ores and made it widely available to the industry, thereby facilitating the further development

of the mineral resources of the district, by large companies which could afford the necessary processing facilities.

The establishment and development of Waihi Borough was also made possible by government provisions requiring mining companies to pay a gold royalty to the local authority. However major infrastructure development was mainly led by the Waihi Gold Mining Company, which loaned government the money to extend the railway line from Paeroa to Waihi, and built the first large North Island hydroelectricity generating station, at Hora Hora on the Waikato river, to supply electricity to the mine in about 1913. In 1919 Government purchased this power station at cost, and with guarantees of minimum supply to the mine, though local domestic supply was only made available in the late 1920s.

While Government continues to play no direct role in the gold mining industry, in recent years it has encouraged private sector by providing tax breaks, deregulating the economy to facilitate foreign investment in mining, and lending moral support to the industry. However significant legislative controls have been introduced which aim to prevent the kinds of environmental abuses that characterised the first phase of mining at Waihi.

The local industry

The current local gold mining industry is based on large scale exploitation of the remaining mineral reserves of the old Martha Hill and Golden Cross mines. Both mines have open-pits, while Golden Cross has two sets of underground workings. At both mines, the main work of excavating the open-pits and doing the waste rock disposal is contracted out to New Zealand companies, and these contractors have changed several times since mining began. The processing plants at both mines are operated by the gold companies themselves, and the bullion is sent overseas for refining - mainly to Australia. Assay work is done by a local independent laboratory, and various specialist services are purchased from New Zealand and Australian consulting firms.

The culture of gold mining

Mining at Waihi was started by independent pioneering characters and the early settlement was physically rough. Women and children endured primitive living conditions with very few amenities and services until after the turn of the century, and there was little paid work for women. The first miners came to the area from the Thames goldfields and as the industry expanded, hard rock miners arrived from Australia and Britain. The approach to mining along with its jargon, technology, ownership structures and workplace relations reflected the British mining tradition.

Early mining was unmechanised, dirty and dangerous, and tended to be done by either small cooperative contract teams, which shared the earnings, or by a contractor with a team of wage workers. The latter, the competitive contract system, was operated by the WGMC and set miner against miner, party against party, undermining the spirit of comradeship and mutual care which was common amongst miners. Criticism or organised attempts to remedy problems were quickly stifled by sackings or non-acceptance of contract tenders. Union spokesmen were especially penalised.

Under corporate ownership, mining at Waihi became particularly industrialised, focused purely on the need of the companies to return profits to their shareholders, and exploitative of its workers - resulting in the socially and economically devastating strike of 1912. In the years that followed the strike, Waihi remained dominated by the interests of the major mining company and local employer, the Waihi Gold Mining Company. At the same time this company remained remote from the community with little

sense of civic or social responsibility. As in other mining communities, mining work became intergenerational, and Waihi's population remained mainly working class, relatively poorly educated, and with low incomes.

According to McAra the adoption of the cooperative contract system brought big changes in the atmosphere of a miner's work creating "a spirit of comradeship not often found elsewhere" (McAra, 1988:268). Because of the technologically advanced environment of mining and the opportunities to learn and practise industrial trades locally, the local communities showed "a remarkably progressive attitude and unusual versatility" (*ibid*). This is reflected in the number of local small scale manufacturing enterprises that have existed over the years.

While mining ceased in the 1950s and the town acquired more of the atmosphere of a rural service centre, mining remained central to the identity of Waihi. This identity was given a boost in the early 1980s with the renewed interest in Martha Hill and Golden Cross. This can be seen today at the entrance to the town, which is marked by a miniature poppet head, in the distinctive form of the Martha Hill "cornish" pump house (which has become a popular motif and adopted as a logo by the current mining company); and in the names of local businesses and clubs.

Along with these reminders, echoes of past social disruption remain. According to one informant " *the town still has a flavour of old dour mining families who have a fear of being seen as stirrers - they are afraid of division*" especially in debates over the acceptability and effects of the new mining operations. The town is seen as dominated directly by the new mining companies and their goals, though to a lesser extent than in the past. Locals who have gained employment in the mines " *have become 'company people', and their values have changed - all improvements are attributed to mining, rather than the product of expenditure of rates, etc*".

The new mining companies have been careful to sell themselves and the benefits of gold mining to the community, and unlike their predecessors, play an active role in local affairs and contribute financially to social services, clubs and societies. The proportion of the population directly engaged in or reliant on mining is much lower than in previous times, and with its more diversified economy, Waihi is not clearly a company town today. As a result, an industry-based social hierarchy is reported to be not as evident as in the past.

Many claim that the town is divided about mining. However positions are reported to be more moderate than in the 1980s when the new companies arrived in the town, and many simply accept or ignore, rather than actively support, mining. Socially and economically, mining and the mining companies of Waihi are difficult to ignore, being literally on the door step, and the biggest employers.

The new gold mining industry has actively sought to create an identity for itself, and the employees of the mines and their families express this through, for example, industry social activities. "Mines United" evenings are held where the social clubs of the mines and associated enterprises get together. Participants in one event, at the time of our fieldwork, included Waihi Gold, Coeur, SGS and ENZED (industry service companies), the mining contractor Doug Hood Ltd, Alton Drilling, Rockdrill, Heritage Mining and the Auckland Law firm Simpson Grierson. Women For Mining, a local social and lobby group with representatives from both the mining companies (including partners) hold special gatherings and events, and there have been annual inter-mine sports competitions. The employees of both companies have also been active in promoting the industry and big writers of submissions on resource consent applications involving mining.

The organisation of work

As outlined, in the earlier era mining developed as a large scale private sector activity in Waihi, and work was organised along industrial lines, with the mine operating 3 eight hour shift per day, 6 days a week.

“The nerve centre of the Martha mine was the office, where the mine superintendent was in charge. Under him were the mine manager, the chief clerk, the surface engineer and the chief electrician, each of whom was .. responsible for his side of mining operations” (McAra, 1988:237).

The manager was also in charge of the survey department which did the mine planning and measured contractors' physical progress - the basis for payment. The assistant mine manager was responsible for the shift bosses, each of whom had charge of a particular area of the mine. The day to day control of the work above and below ground was done by these shift bosses who were generally experienced miners. Each was responsible for ensuring efficient and safe operation of his section of the mine and controlled the supply of necessary materials and equipment. They also directly controlled the wage workers. A shift boss generally spent at least half of each working day underground.

The various mining jobs were carried out by “parties” of workers operating under a contract system. In the early days this was competitive, and later became cooperative or “all in the job” contracting. The parties of cooperative contractors, of four or more men, usually made their own work arrangements “subject to the mine manager’s approval” (*op. cit.*:238) and appointed their own agent to represent them in negotiations with management over the work and terms. The size of the party formed for the work depended on the size of the job involved. Work was paid for on an agreed piecework basis, with different rates for different jobs. For example timbering, and mining itself were paid on a per foot or per ton rate. Under the cooperative system, members of a party had equal status and pay. Apart from daily visits by the shift boss and periodic visits by the Mines Department or union’s own inspector, miners were largely left to their own devices on the job. They tended to be higher paid, and enjoyed higher status than other workers because the whole mining operation depended on their output. Company tally clerks kept account of time worked and the daily production from each party - and the tallies were posted for inspection at the beginning of the next day. Parties were paid up for their contracts every 4 weeks (“big pays”), though intervening fortnightly pays (“sub-pays”), at wage rates, were made out of the contract amount. (*ibid*)

As well as the contract workers, the mine employed wage workers, engaged in a wide variety of jobs, and there were clear lines of demarcation of jobs - each requiring different types of skills. Most of the work of extracting the ore was done during the day and afternoon shifts, while supply and maintenance activities were done on the night shift.

The Victoria Battery at Waikino, where the ore was processed, had its own manager, and was also organised in departments, each with their own managers and supervisors. Most of the workforce at the battery were on wages. Of the approximately 200 employees, half were shift workers operating the continuous ore treatment process over a five and a half day working week. The Victoria Battery also had substantial engineering, service, maintenance, technical and accounting departments, each with a complement of tradesmen and specialists. Gold and silver refining was done by specialists at a refinery near the mine in Waihi.

Mining Work Today

Mining today is generally organised along similar lines as in the past. Both the Waihi and Golden Cross mines have open-pit operations, though Golden Cross also had underground mining. Each form of mining entails different types of work. Open pit mining is essentially large scale quarrying, carried out by drilling and blasting, or ripping rock from the pit bottom, loading it on large hauler trucks carrying it out of the pit to a crusher, and from there it is conveyed to a waste rock disposal site or to the processing plant. The work essentially involves operation of heavy machinery, and those doing the work are experienced equipment and transport operators, rather than people with traditional mining skills. In both of the Waihi mines, this work is done by contracted earthmoving companies with their own workforces and equipment.

Up until mid 1998, the WGC's quarrying and tailings disposal work was done by the New Zealand contract mining and earthmoving company DML Resources, formerly Downers. DML employed about 80 of the 135 or so workers at the Waihi mine. Some of their workers were brought in from the company's operations at Huntly. DML's workers had different employment contracts from WGC's workers. In a recent contract round DML attempted to reduce employment conditions, reportedly "*wanting more hours for less pay and doing away with overtime rates*". Failed contract negotiations resulted in a lockout /strike and considerable tension between the workers and the company which last several months. The WGC itself reduced operating hours and relied on stockpiled mined material to continue gold production. In an echo of the 1912 strike, some of the miners capitulated and signed the new contract, binding the rest of the workforce into the new arrangements. As in 1912, according to a local agency informant, the contracting company apparently "*weeded out the troublemakers*" and at the time, "*the town was not too concerned for the workers and their union representatives*".

Uncertainty gain arose in November 1997 when DML, part of the Maine Investment Group of companies, went into receivership. In mid 1998 DML's contract ended and Hoods, an earthmoving an contracting company from Oamaru - who are also the mining contractor for the Macraes Gold Mine in Otago, and who had been the contractor for Golden Cross, took over.

At Golden Cross, Fletchers were the initial mining contractors, followed by DML Resources, and latterly Hoods. With each change, the contractor brought in its own management staff, systems, and equipment, but used the core of the previous contractors workforce.

Golden Cross also had an underground mine until the closure in late 1997. This pit was worked on a shift basis, with two ten-hour shifts per day with the remainder of the time used for maintenance, blasting and crew changing. The day shift worked from 11 am to 9 pm, and the back shift 9 pm to 7 pm, with workers on a 3 days on, 3 days off roster, changing shifts with each round. According to one miner they worked "*Monday to Friday, though there was always plenty of overtime available - with optional weekend 12 hour shifts, and opportunity to work 7 days a week. Pay was good, \$10-\$11 per hour plus allowances*" - giving a basic annual pay of about \$50,000 per year, and with overtime (at penal rates) up to \$70,000. These pay rates have been noted by Couer as being well above typical rates for similar work outside the industry, and employees spoken to felt the conditions and organisation of work were relatively good. Underground miners were Coeur employees.

According to the local NZ Employment Service, there were was no apparent pay rate differential between the two local mines.

Modern underground work was highly mechanised, and relatively safe, but involved longer day working hours than in the past, and the number of miners required was smaller - around 65 at Golden

Cross. Coeur had a gain sharing scheme to encourage cost savings (with part of the savings paid out to workers) and a “zero accident workplace” philosophy. Coeur workers also are reported to have had “*secrecy clauses in their employment contracts forbidding them to talk about their work or the mine operation*”.

Those recruited for underground work were not necessarily required to have previous experience in mining. One miner indicated that he got a job with Cyprus “*unskilled off the street*” and after a short training period was working underground. Most of his fellow workers were also new to underground mining, having previously been equipment operators or farm workers, and many had returned to the district after living in overseas to find work in the mines. The company counted such recruits as locals.

At both mines the owner-company employed the management staff, technical specialists and the processing plant operators. The WGC operates its open-pit from 7 am to 7 pm and its mining workers are not on shifts, however the processing plant operates around the clock, with a night shift skeleton crew of two or three workers

Characteristics of the Workforce

As described by Coeur Gold management, both mining companies have different types of employees:

- company employees who include unskilled workers as well as professional staff in a range of disciplines (such as mine management, civil and process engineering, earth sciences, metallurgy, environmental management and administration), each with a small cadre of skilled assistants.
- contract employees, including the mining and earthmoving contractors workers and various mechanical and electrical contractors. Each contractor manages and recruits their own workers.
- consultants - used periodically for various specialist tasks, including mine planning and resource consent applications and specialist monitoring work. Coeur noted that in 1996 they were using about 20 consultant groups each year.

A feature of the modern workforce is the number of women involved. In the past, women were limited to administrative support roles, however today they are engaged in all types of work and in a range of capacities. For example, the WGC information officer indicated that at the end of 1997 their female workers included, among others an accountant, a property manager, an information officer and 2 assistants, an accounts clerk, a personal assistant to the manager, a mine clerk, an engineer, a geotechnical assistant; an environmental manager, 2 environmental technicians, 2 processing mill workers, 2 metallurgists, and 2 truck drivers.

In October 1997, Waihi Gold reported they had 131 employees, including the mining contractor’s workers, 61 of whom had been resident in Waihi or Waihi Beach prior to 1997. The majority were living in Waihi, Waikino, Waihi Beach, or nearby. However workers also travelled from Katikati, Tauranga, the beach settlements of the east coast of the Coromandel Peninsula, and from the Hauraki district, including Paeroa, and Ngatea. According to 1995 data, over 70 per cent of Coeur’s 163 workers were sourced from the same district - most notably 44 per cent from Waihi and Waihi Beach, and 11 per cent from Katikati, 7 per cent from the Bay of Plenty, with the balance of the “locals” from the Coromandel settlements and Hauraki district. Sixteen percent came from other regions in the North Island, 4 per cent from the South Island, and 7 per cent from overseas (Weston, 1995). However it is not clear who in these workforces actually resided locally before the mines opened. Several local community service providers and a district council officer estimated that the genuine local component

of the mining industry workforce may have actually been quite low, perhaps only 10 per cent, with many of the workers having been initially recruited out of the area or attracted back “home” for the employment opportunities. Others confirm that the mining workforce is not particularly centralised on Waihi, and that the workers are indeed resident over a wide area of Hauraki, the Bay of Plenty and Coromandel.

There has been some movement of personnel between the two mines, including of technical staff, and at the time of our fieldwork and the closure of Golden Cross, experienced workers there were pursuing employment at the Martha mine.

As noted elsewhere, most of the professionals and the technical specialists have been recruited from overseas, or from within the companies’ own workforce elsewhere. Locals tend to be engaged in administrative, semi-skilled or unskilled positions and perhaps acquire skills on the job. Getting onto the workforce tends to be by word of mouth from relatives or friends already employed in the mines. Many of the non professional workers were new to the industry, but may have had experience in heavy machinery operation or worked in agriculture or construction.

REGIONAL AND LOCAL ECONOMY

The Hauraki District is part of the Waikato Region. In 1996 this region had a population of 350,125, of whom about one third lived in Hamilton, the educational, commercial and administrative centre. Waikato is best known as one of the richest agricultural and pastoral areas of the world, and its wealth comes mainly from primary production and the manufacturing industries set up to process this production. With \$3.2 billion annually in exports, Waikato is the biggest exporter of all the regions. Farms make up about half of all the businesses and employ about 17 per cent of the workforce. The Waikato is synonymous with dairy farming, having around 12,000 dairy farms occupying about 40 per cent of the farming area. Forestry is also an important aspect of the current economy - with approximately 11 per cent of the land area planted with exotic forests.

The Waikato region also includes the goldfields of Hauraki District and the tourism areas of the Coromandel Peninsula, and both have become increasingly important to the economy of the region. According to Wheeler (1997), the Coromandel Peninsula receives an average of 7,500 visitors per day, creating up to \$200 million in economic activity per annum, and maintaining up to 4,000 direct and indirect jobs.

Figure 4 below indicates the distribution of employment by sector for the Waikato region and Hauraki District in comparison with the New Zealand pattern. The economy of Hauraki District is even more dominated by agriculture than the region. Approximately 1,800 of the 7,000 or so in the workforce are engaged in agriculture. As with the region, dairy farming is particularly important. For what is essentially a rural district, Hauraki has a relatively high proportion of people engaged in manufacturing. Yet over the past 10-15 years Hauraki has experienced closure of its dairy factories as the industry rationalised and centralised its processing facilities at Te Rapa close to Hamilton.

The mining industry, specifically gold mining, represents a significantly higher proportion of the district workforce than the rest of the region and the nation. According to the district council, prior to the Golden Cross closure the industry was putting \$87 million per annum into the regional economy. This expenditure included \$353,000 per annum in rates paid to the district council. The district also benefited from 2 periods of mine construction expenditure and employment in 1987/88 and 1990/91. Wheeler (1997) has calculated that in 1995/96 the Martha Mine alone directly contributed nearly \$64

million to the region, - with at least \$20 million paid out for goods and services to suppliers in the district, and over \$7 million in local wages.

While gold mining was the mainstay of the Waihi district until the early 1950s, the Waihi Basin also grew as an agricultural area. The earliest farms were established at the same time as mining, though agriculture never really developed until the trace element problem in the local soils was solved in the 1930s. In 1924 there were 150 farmers in the district, however “not a single business in Waihi catered for the needs of farmers” (Swinton, 1962:155). Dairying became established, and in 1953 a cheese factory was opened in the district. By the early 1960s there were approximately 240 farms bringing £1,000,000 into the district annually, and the town had become largely a rural service centre. The cheese factory closed in 1981 - an early victim of industry rationalisation. Waihi also had a minor horticultural boom in the 1980s when kiwi-fruit and other orcharding was developing in the Bay of Plenty, however locally this has largely disappeared.

After the closure of the Pye/Phillips factory in Waihi, a number of the former technical staff and others rented the premises and started small specialist manufacturing enterprises which continue today. A wide range of other small scale manufacturing enterprises have also been established locally since the 1950s, contributing to the economic diversification that enabled the town to survive beyond mining. This pattern continues, and in 1996, there were 354 locals (and 75 from Waihi Beach) employed in manufacturing, particularly of metal products, telecommunications and electronic equipment, electric lighting, industrial equipment and machines, and furniture.

Waihi has a growing visitor/tourism industry - and according to the Waihi Gold Company, its mining operation attracts large numbers of visitors. In 1996 37,000 people reportedly visited the information centre near the mine, and 11,800 (85% being New Zealand residents) went on the free guided tours offered by the company. The vast majority of these visitors however don't actually stop over in the town.

Despite comparative high earnings of those working in the local mining industry, the 1996 census indicates that the average personal, household, and family incomes for Waihi were lower than for the neighbouring communities of Waihi Beach, Paeroa, Whangamata and Katikati, and had been so for at least the previous 10 years. Seasonal agricultural work is reported to be lower paid than 10 years ago, however there is little of it because the 1980s horticultural boom was not sustained.

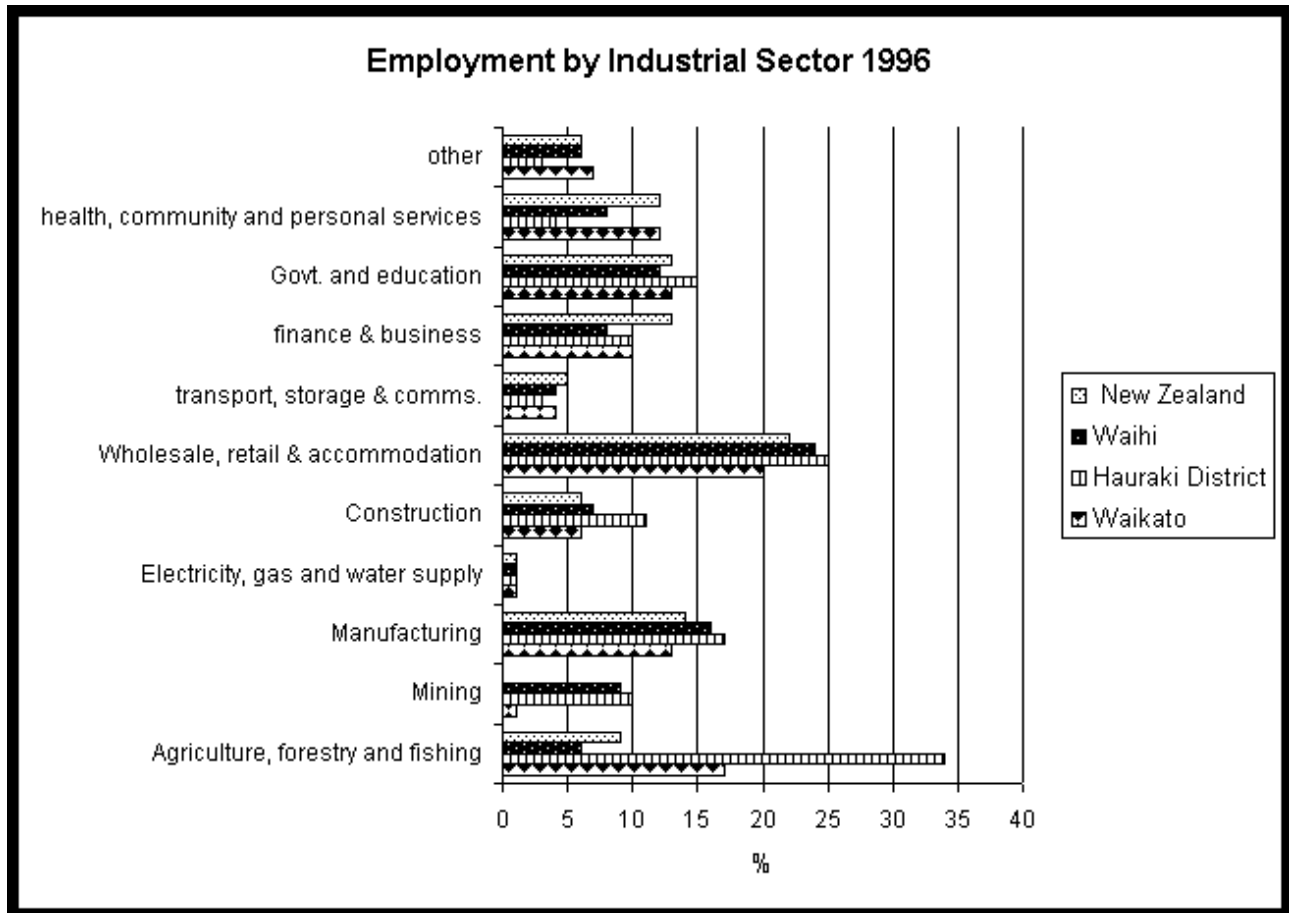
In September 1983, before the current round of mining and before the Phillips factory closure, there were 212 locals registered as unemployed. In September 1997, there were 499 local, and 154 Waihi Beach residents on the NZ Employment Service's Waihi unemployment register, with 70 more or expecting to be looking for work after the closure of the Golden Cross mine. Most of those on the register were males in the 25-40 age group. According to the local NZES manager, when the new gold mines started up, they had no effect on local unemployment, and only a “*sprinkling of real locals*” got jobs. However downstream jobs were created which tended to go to locals. Others involved in local employment and economic development report that the company took lists of job applicants which they never actually used, and the long term unemployed or those with criminal convictions were rejected out of hand. People also drifted into the town looking for work in mine construction and mining, swelling the ranks of the local unemployed for a period. The competition for the jobs was fierce, for example, 850 applications were received for the first 22 mining jobs at Golden Cross (NZ Herald, 29/12/90).

Construction of the two local mines also generated employment - 96 full-time equivalents (FTE) in 1987 and 1988 for the Martha mine, and 331 in 1990/91 for the Golden Cross mine (Wheeler et al,

1994). Most of this work went to various firms located in the Waikato Region who brought their own workforces to the town for the construction period, or commuted.

By 1993 there were 382 FTE jobs in the local industry - 150 at the Martha Mine and the balance at Golden Cross (*ibid*). The 1996 Census recorded that 180 residents of Waihi, and 78 of Waihi Beach were employed in gold mining. Around the same time Golden Cross had approximately 190 employees and mining contractors, and Waihi Gold had approximately 135. Both workforces have since reduced.

Figure 4



Source: Statistics NZ, Supermap3, and Hauraki District Council.

Businesses

Waihi has a wide range of retail and services business. In 1996 there were 256 listed businesses in the Waihi Basin, the majority of these being in the town itself (Waihi Gold Company, 1997). A 1989 souvenir publication by the Waihi Borough Council listed 123 businesses in the main part of the town - about 20 fewer than in listed in the 1962 Diamond Jubilee publication. They also reported that less than 12 per cent of the businesses listed in 1962 were still in existence in 1989. However “the reactivating of gold mining has seen the emergence of many new industries and over the past 25 years, and a number of others have come and gone” (Greenhaigh, 1989:11).

Most daily needs are available in Waihi, but those who have the means tend to make major purchases in the larger centres such as Auckland, Hamilton and Tauranga. Those on lower or fixed incomes tend to be more reliant on local businesses, where prices are said to be higher. In a recent survey of local

enterprises conducted as part of the planning for the Martha Mine extensions, 88 per cent of those sampled reported they regularly supplied goods or services to Waihi Gold. This trade was worth over \$20,000 in annual turnover to just under half of these enterprises. About a three quarters indicated that Waihi Gold business made up less than 20 per cent of their total turnover. In addition over 90 per cent of enterprises reported they provided goods or services to mine employees, and for four fifths of businesses, this trade made up less than 20 per cent of their total turnover (Wheeler, 1997).

PHYSICAL AND SOCIAL INFRASTRUCTURE

Physical Infrastructure

Waihi is now administered by the Hauraki District Council and a community board after having been a separate borough from 1902 until 1990. Under current arrangements the community board has responsibility for local infrastructure and amenities. The District Council receives a total of \$10 million annually in rates, approximately 40 per cent of which is managed by the various community boards.

Because of low property values, and long standing low rentals on miners' residence sites, the town's rates revenue was traditionally extremely low, with only £75,000 collected in the borough's first 40 years (Morton, 1962). Up until the Martha Mine closed in the early 1950s, the Borough Council relied on the gold duty, paid by the mines by law to the local authority, for establishing civic amenities and carrying out public works. Much civic development occurred in the boom years of the first decade of the century. With reduced production from the mines from the 1920s on, the Borough's income also went down, placing increasing strain on finances, and amenities established in the years could not be maintained. Other than the gold duty payments totalling around £500,000 over the life of the Martha underground mine, the WGMC played no active role in the development or maintenance of the town (Morton, 1962). By the time the mine closed the town looked shabby and amenities were rundown.

Roads were a particular problem for Waihi. They were initially constructed from waste rock from the mine, and because of the size of the Borough, the amount of roading, and the low density of settlement, they went unsealed until the late 1950s. Hence the town had a reputation as being rough and dusty. With the contraction of the Borough after the Martha Mine closed, and despite the loss of the gold duty, an improvement programme was begun and the town's roads were slowly sealed. At the time of the town's 60th anniversary in 1962, 70 per cent of its 37km of roads were still unsealed. By the time of amalgamation in Hauraki District in 1989, this was only seven per cent, with the improvements largely paid for by the Borough's land investment at Waihi Beach. Today large areas of the urban part of Waihi still lack kerbs, channels and footpaths, and this will require around \$4m to compete (Hauraki District Council, 1997). The main streets of Waihi still have large gutters, which in the past carried light household and commercial wastes "which were flushed by a continuous flow of tepid underground water pumped from the mines" (Morton, 1962:24). However when the pumping ceased, the channels dried up.

Domestic electricity supply arrived in the late 1920s, much later than the supply to the mine. The Borough Council had earlier opted to install a gasworks rather than an electric lighting plant, and Morton argues the delay in electrification was an attempt by the Borough to protect its investment in gas. The run-down gas works was closed in 1952. (*opt cit*)

Domestic water supply was established at a time when the mines held most of the rights to the local water resources and when the Borough was 3 times its present size. After contraction of the Borough, the town supply continued to supply the wider area, and had difficulties in meeting demand. In recent times, as new building and infill development occurred, the supply had to be improved, however this

time the council has had access to local water sources, and has not had to compete with mining for the resource.

Prior to the recommencement of mining only a third of the Borough was reticulated for sewage, with the older parts of the town having to rely on septic tanks and night soil collection. The rest of the town, except Waihi East, was reticulated about the time of the construction of the new mine, and as with the street improvements, this was made possible by the Council's Waihi Beach property fund.

The current mining industry has helped the local treasury. According to a local community board member, mining annually contributes around \$150,000 in rates, and \$49,000 for local works and services. Most of this is spent on physical amenities, and works and services such as footpaths, recreational reserves etc., and on improving the appearance of the town. Mining has also contributed \$50,000 to the development of a new sports hall. However, according to the last mayor of the Borough, the mine planning and approvals work of the mid eighties and prior to the Resource Management Act, cost the ratepayers approximately \$120,000 in legal fees as well as a lot of Council time. Further costs were incurred after mining began. No record was apparently kept of the actual costs to the Council of the recommencement of mining. At the time the mine was being planned the rates income was falling, and the additional demands put added strain on the Council's finances. However the WGC made a development grant to the local councils which the Borough chose to spend on improving the town hall.

The Hauraki District Council has a fully operative district planning scheme which includes zones for mining and related land uses in and around Waihi. At the time of fieldwork in late 1997, the Hauraki District Council had voted to do away with its community boards, including Waihi.

Transport

The earliest roads into the district from the south and west were rough and, frequently impassable. Freight, including mining equipment and coal was transported by horse-drawn wagon from Paeroa, and later, with the building of the road through the Karangahake Gorge, by steam traction engine. More affluent travellers came and went until 1920, by regular stage coach service, with a trip to Tauranga, for example, taking the best part of 8 hours. Because of the difficulty of travel,

“life was anything but mobile for the vast majority before the arrival of the railway and the motor car. People stayed in one town, often for many years, without ever leaving it” (McAra, 1988:267).

A railway link from Thames to Paeroa was established in 1889, and with funding support from the Waihi Gold Mining Company, to Waihi in 1905. The line was eventually extended to Tauranga, and rail became the main means of transport to the district. The opening of the Kaimai Tunnel in 1978, providing direct access from the Waikato to the Bay of Plenty, made the Waihi line and the local rail facilities redundant, and they were closed. Nowadays freight haulage is entirely by road.

Locals and those resident at Waihi Beach or other coastal communities rely on private motor vehicles and taxis for public transport. However there is a regular bus service on State Highway 2 connecting Waihi with Tauranga, and with Paeroa and beyond. Local transport is reported to be a problem for those without access to private vehicles. A charter company provides school buses.

Housing and Property

In the early days of the development of mining at Waihi

“conditions were generally rough; accommodation was at a premium and there were a high proportion of single men, who lived in the various boarding houses scattered throughout the township” (McAra, 1988:264).

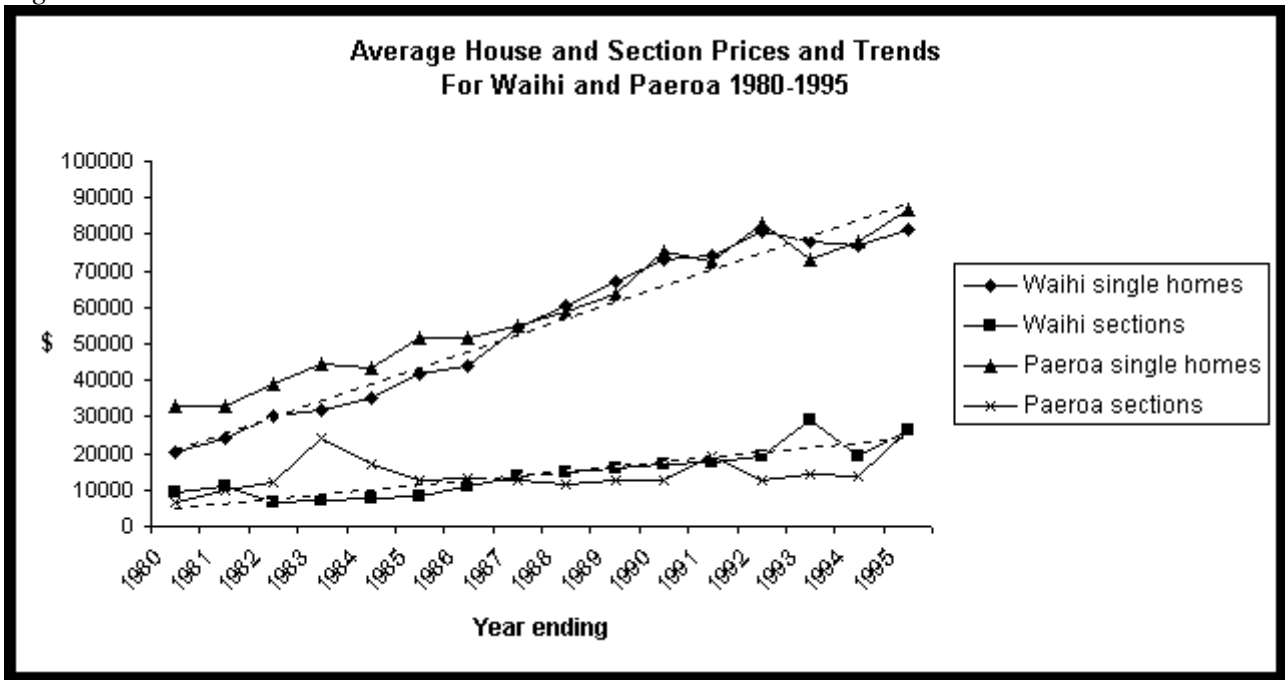
Rough two or three roomed cottages slowly grew up around Waihi located on half or 1 acre miners residence sites. Over time these first rudimentary cottages were extended and improved, or replaced by more permanent five-roomed weather board houses of under 1,000 square feet, built of rimu or kauri, with a front veranda, a hallway up the centre, a lean-to washhouse or kitchen at the rear, and an outside toilet. These houses cost around £100 to build, and many remain, albeit upgraded, in the town today (*ibid*).

In the period between the 1930s and 1950s there was little confidence in the future of the mining industry and the town, and there was almost no new building. However within 10 years of the mine closing, nearly 300 houses new were built. Until recently, because of the nature and condition of local housing stock, house prices in Waihi have been very low compared with other centres. In the 1960s and 70s the low prices attracted new settlers, including alternative life-stylers.

Between 1984 and early 1995 the Waihi Gold Company purchased 80 residential properties within the town and subsequently purchased 32 additional residential properties for its mine expansion (Young, 1997; Meade Rose, 1997). Purchases since the mid 1980s have included land required for the mine or associated facilities and structures, properties likely to be significantly impacted by mining activities, or properties which may help provide the company with “buffer” area around the mine. The company also has a stated policy of purchasing homes “if the owners can demonstrate that they are unable to sell their houses on the open market due to the mine’s impact” (Meade Rose, 1997:6). In some cases the company has provided replacement houses elsewhere for those displaced by the mine. According to some locals, since the company has been operating in the town it has acquired up to 160 of the district’s properties, and while the terms of these purchases are confidential, it is believed that typically *“the prices have been 10% above market rates”*. Recent analysis shows that properties close to the current mining activity are slower to sell than similar houses which are more removed (Young, 1997).

Valuation Department Statistics for the area omit most of the sales to the Waihi Gold Company because these sales were not under open market conditions and therefore distort the “typical” pattern. Between 1980 and 1995 there were 1563 “typical” house sales, and 280 section sales in Waihi - including about 5 per cent to Waihi Gold. Average house prices in 1980 were \$20,500, and these have risen steadily since (Figure 5). Prior to 1987 when the mine opened, Waihi house and vacant section prices, and the volume of sales, were significantly below those of communities of about the same size in the wider district (e.g. Paeroa and Te Aroha). Since then prices and sales have generally exceeded those of other communities. The change in the property market has been attributed by the mining companies and their consultants to the recommencement of mining in 1987. However some locals believe that a significant component of the property price increase has been due to new settlement by Aucklanders looking for cheaper housing and easier retirement conditions, by local elderly moving into smaller, higher quality homes, and by outsiders buying investment properties. Since 1986 the number of dwellings has grown at a noticeably faster rate than the population, and there are increasing numbers of small units being erected. The housing market of Waihi Beach has been similarly affected, though traditionally prices there have been higher than in Waihi and other district centres.

Figure 5



Source: NZ Valuation Department (in Young 1997)

In 1984 there was a recognised shortage of rental accommodation in Waihi and this had been occurring for several years. Rentals ranged from \$40-\$70 per week. Waihi Beach, with its large number of baches and holiday homes, provided a stock of off-season rental housing. During the main period of construction of the Waihi mine, when property prices increased dramatically, rental properties became particularly hard to find, and according to some local community workers, rents rose accordingly. At the same time the Housing Corporation began selling its rental stock. Along with unemployed people who arrived in the town looking for work, but not recruited in the mines or their construction, low income families were forced to into renting caravans at the motor camp or into sharing houses. While this problem reportedly corrected itself, at the beginning of 1997 there were 30 permanent residents of the local motor camp - mostly seasonal workers or welfare beneficiaries. A gold company official indicated that during the construction period for the Martha and Golden Cross mines, 50-60% of the construction workers stayed in the district in rented houses, hotels and motels, and the motor camps, while the remainder commuted from outside the district. Staff of Cyprus Minerals and its successor Coeur Gold tended to take up residence at Waihi Beach, consuming available quality rental properties, and reportedly pushing up rents.

Today, as for many years, about 25 per cent of all Waihi's dwellings are rented out. The tight rental situation has continued, with Waihi and Waihi Beach weekly rents in 1997 running at \$150 for an average house and \$110 for a 2 bedroom flat.

The Waihi Gold Company has become the major rental housing supplier in the district since most of the local houses acquired by the company were retained intact and rented out to staff, employees of the mining contractor, and in some cases other locals. Mining company employees pay rents well below the market rate. As noted, many of the properties are in impacted areas adjacent to mining activities, and the mining company therefore benefits by having compliant or non-complaining neighbours. There are considerable concerns about the impact on the rental accommodation supply of the large number of demolitions of company-owned houses that will take place to enable the proposed mine extensions, and in the longer term, from the expected sell-off of remaining company properties when the current round of mining eventually ends (Meade Rose, 1997).

The large scale purchasing of properties by Waihi Gold has meant the break-up of neighbourhoods, with long-term permanent residents being replaced gradually with company tenants, who are reported to have less commitment to their neighbours and to section maintenance. Some argue that poor maintenance of these company houses and sections has degraded areas of the town, and lowered the property values for those private home owners who remain - causing them to experience difficulty selling on the open market, and eventually forcing them to sell up to the company.

Proposals to extend the Martha Mine, and longer term potential further expansion, have generated uncertainty about security of environment and residence among some home owners who previously considered they were safe from mining activities. Others fear that some new residents have been ignorant of the potential future dangers, and have been buying houses, especially at the east end, without real estate agents having informed them of the mining developments planned.

Education

The first school in Waihi was opened in 1890. Over the next 25 years 2 further primary schools, a technical school, and a School of Mines were established. Schools were also established at Waikino and in rural areas. Over the years there have been various site and name changes, and rolls have fluctuated according to the fortunes of the town. Following the closure of the original Martha Mine in 1952, local schools had sharp decreases in rolls, and a steady decline set in until the late 1980s (Fitzgerald, 1985). Today Waihi has three primary schools - two state and one private - and a secondary school. Waihi Beach, Waikino and Waimata (a rural area) each also have a primary school.

Overall, the number enrolled at primary and secondary schools in the Waihi district has increased since the new round of mining began in 1987. Prior to that, in 1984, the rolls at all but Waihi Beach and Waikino primary schools had been dropping, reflecting the towns declining and ageing population. The total number attending the district's six primary schools in 1984 was 772. Based on population characteristics and trends, in 1984 all the schools of the district were predicting declining, or a best static rolls (*ibid*).

However by mid 1996 the primary roll had grown to 945. From 1984 to 1994 the roll at Waihi College, the only secondary school, increased from 776 to 824, but fell to 760 in 1996. According to Meade Rose (1997) much of this growth can be attributed to incoming mining families. In a 1997 survey of their workforce, Coeur Gold found their workers contributed 21 secondary, and 45 primary pupils to local schools, and a further 25 pupils to schools outside the district. This was down somewhat from 1995 when they estimated there were 220 children associated with the Golden Cross workforce at schools in the Bay of Plenty/Hauraki region.

The recent growth in local school rolls has not been even, and as in 1984, schools were having to deal with fluctuations in numbers due in part to the numbers of itinerant or short term residents in the district.

In addition to the extra pupils, the incoming mining families have added to the district's pool of teachers: 6 local permanent teachers, and 6 of the 17 listed day-relievers, came to the town because of mining. In terms of primary teachers, one principal reported that his school had experienced difficulty in the past in recruiting new teachers, and had to employ a teacher from Australia.

At the end of 1997, Waihi East School's roll stood at 245 and it had been growing for some time - gaining 6-8 children each year for the past 4 years. However in 1984 the roll had been falling, and in the previous year the school had lost a teacher as a result. The principal indicated that growth has been the result of new housing development in the immediate area with families moving to the town from Auckland and other cities for cheaper rent and the lifestyle, rather than from incoming mining families.

About 19 pupils were from mining families. The early growth in the roll was such that the school had to build a new classroom using locally raised funds, and subsequently the Ministry of Education built 2 further rooms. In addition the board had to introduce an enrolment scheme in 1994 to limit the demand for places. In contrast, the roll at Waihi South School, located on a site occupied by the former School of Mines on the lower western slopes of Martha Hill, has declined since 1984.

The roll at Waihi Beach has grown by 10-20 children per year (or 5-6 families) in recent times - going from 145 before mining to 220 in 1996. Much of the growth is attributed to the incoming mining workforce - especially Coeur Gold. Waikino School's roll has fluctuated considerably since the early round of mining ended in the 1950s. In 1980 it reached a low of 9 pupils and 1 teacher, with many parents preferring to send their children to Waihi. Community revival, and an influx of new settlers - especially alternative life-stylers - stopped the potential loss of the school, and by 1996 the school had 78 pupils - with an estimated 50 per cent travelling out from Waihi. The same is true of the rural Waimata School which has grown from 43 pupils in 1984 to 77 in 1996 (Meade Rose, 1997).

Despite experiencing considerable growth in school rolls, a local principal felt that "*there was never a big hit of children in the schools from mining*". Schools have experienced some difficulties with the adjustment of new comers from overseas, though "*generally the new parents have fitted in well and joined in*". As in the past, most seventh form school leavers leave the district for further education and employment, there being few opportunities for them in mining or other local industries.

The mining industry has made a particular public relations point of contributing to local schools. For example, the WGC set up an education trust with Waihi College to which it annually donates \$25,000 per year for use on tertiary scholarships and equipment etc. Other local educational contributions include a young enterprise scheme for senior students, sponsorships for school events, and partial funding for an environmental promotions and education co-ordinator for schools.

Training

Between 1897 and 1946 Waihi had a School of Mines to enable those working in the industry to obtain specialist certificates in various aspects of mining. Subjects offered included mine and battery management, surveying, ventilation, pumping and winding, geology, chemistry, assaying, drawing, electricity, mathematics, mechanics, and hydraulics. Both evening and day classes were provided to enable shift workers to attend, and students came to Waihi specifically to study at the school. It was supported by subsidies from the Government, local bodies, mining companies and the public, and eventually closed when Government withdrew its support as a result of the decline in local mining. In addition to training, for a time the School published annual geological bulletins focusing on the Hauraki and Reefton goldfields, and provided scholarships for students wanting to move onto university. It also exposed locals to practical science and new technologies, for example in 1909 some of the earliest experiments in radio transmission were carried out at the School and demonstrated at public seminars.

Today there is no tertiary educational institution in the district. Since 1980 the Salvation Army has operated a training centre in Waihi providing government-funded courses for low achieving school leavers, long term unemployed, and women returning to the workforce. Courses include life and work skills, crafts, panel beating, and rural/farm skills. Government requires that most of the courses have 60 per cent Maori and 50 per cent women trainees. At the end of 1997, there were 52 trainees, and there were waiting lists for courses. The Salvation Army also operates courses in Paeroa, and there are other registered training providers in Whangamata, Paeroa, and Thames. Transport appears to be a big problem for trainees, especially those not resident in Waihi itself, or those having to travel to attend courses in other centres in the district. The local manager reported that WGC had donated a double garage to the Training Centre's farm unit in return for trainee labour, and provided credit to enable it

to purchase needed machinery. They also used to manufacture the boxes used by the WGC for shipping bullion.

The Waihi office of the Hauraki Enterprise Agency also provides, on behalf of the government's Community Employment Group, "Be Your Own Boss" courses according to demand, along with a small business development programme.

Both mining companies at Waihi have provided on the job training for their staff. In preparation for the closure of the Golden Cross mine, Coeur Gold also provided a programme of adjustment courses for its workers, including stress management, small business establishment, personal budgeting and finance, and resume writing and job interviewing.

Health

A public hospital was founded in Waihi in 1904 to meet the needs of the rapidly growing population of the Waihi district, and especially to treat mine accidents and provide care to those suffering lung problems caused by mining and processing. In 1962 this hospital had 44 beds including a maternity wing, 2 part time doctors, 9 nurses and 18 aids, plus 15 other staff. By 1985 this hospital was providing mainly geriatric and maternity services with limited accident and emergency facilities, and no surgical service. Nowadays the hospital is privately owned, and local residents have to travel to Thames district hospital for clinical services. The town's medical centre was established in 1980 and currently has 4 general practitioners - one more than in 1984 before mining recommenced. Specialists also periodically visit. The area also has a district nurse and a public health nurse.

Occupational health services are provided by the WGC at the mine for its staff using an outside provider. Both mines provide first aid training to their workers, and at the closure of the Golden Cross mine, Coeur Gold provided 3 months post-redundancy medical cover for its laid-off workers.

Government agencies, and services provided by voluntary organisations

Prior to the recommencement of mining, Waihi had offices for various government departments, including Health, Justice, Forest Service, Police, Post Office, Public Trust, Railways and Transport. However there was a lack of government and voluntary social service agencies: for example employment and social welfare services were provided from Paeroa (Fitzgerald, 1985). Government restructuring meant many of its local services ceased or were corporatised. From the late 1980s until 1994, the community-based Waihi Employment Network, formed out of the Unemployed Workers Union, provided the NZES job-seeker service on contract. Today most Government social services are available in Waihi, and the Department of Social Welfare and Employment Service have local offices. The latter covers Waihi Beach, Waihi and Whangamata and in late 1997 had 860 registered job seekers. Small business and local economic development programmes of the Community Employment Group are provided by the Hauraki Enterprise Agency which has a local co-ordinator.

In the 1980s, in response to high unemployment, increasing social problems, impending social change from mining, and lack of support agencies, a number of community-initiated services began. A Resource Centre was started in 1985 as an information and referral service, and as a base for visiting agencies and community education. One original member reported that at the time the people involved were judged as hippies, and as a result they failed to win the support of the Borough Council and the mainstream community. Funding difficulties, and the separation into different groups of the services provided (such as the information centre), caused a wind down of the Resource Centre until its re-launch in 1990. Today the Centre has a paid co-ordinator, funded by Lotteries Board and Social

Welfare grants. Funds are provided for an information, advice and referral service, informal counselling, and various support groups for men and women, youth, psychiatric survivors, and young mothers. The Centre, which is privately owned and leased to the organisation, is also used by various community groups and by the local Youth Co-ordinator. There is also a local budget advice service, elderly persons support, Plunket, pre-schools, kohanga reo, and a community marae all providing services and activities for their particular groups. The Waihi Gold Company provides material support to various local social services.

A 1987 voluntary sector initiative to get a community development worker for the town failed when, after having received two thirds of the necessary funding from Internal Affairs and the Waihi Gold Company, the Borough Council refused to contribute. Grant monies then had to be returned. The development grant paid by the WGC to the Waihi Borough and Ohinemuri District councils was used on “bricks and mortar” projects, such as refurbishing the Waihi Memorial Hall. This affirmed the position of the council, continued by the Hauraki District Council, of not getting directly involved in social services or community development activities.

In 1984, the local police force consisted of 4 officers and a sergeant. In 1997, the local police complement had increased to, according to one informant, over a dozen. Meade Rose has attributed the increase in police numbers to internal Police reorganisation (1997).

COMMUNITY ORGANISATION

Local government

As noted elsewhere, Waihi Borough, founded in 1902, became part of the Hauraki District in 1990 and today Waihi has a community board responsible for major local infrastructure and amenities. In late 1997 the Hauraki District Council was moving to abolish the community boards and replace them with ward committees, each made up of 4 members from an expanded council.

Industry as citizen

In the first round of mining the industry had little direct involvement in the affairs and life of the town, and contributed little. However the current industry is somewhat different. Both the Waihi Gold Company, and Cyprus/Coer have made deliberate attempts to inform and involve their local communities in the planning for mining, setting up community liaison forums in Waihi and Waikino. The Waihi Liaison Forum, which ran from the early 1980s to 1987 when it was disbanded by the company following the granting of the mining licence and environmental approvals, consisted of representatives from local organisations and the company. The forum therefore did not operate during the construction phase - when the greatest social and physical changes might be expected to occur in the town. A new community liaison forum was established by the Hauraki District Council in 1993 to assist in resolving on going difficulties over the impact of mine operations, and is made up of an independent outside chairperson and elected representatives from the district council, community, the local environmental organisation Ohinemuri Earthwatch, iwi, and mining company staff and management. One “neutral” representative reported during fieldwork that the company is a reluctant participant in this forum, and as a result it has become increasingly ineffective and had not met for over 18 months, despite the company being involved in planning for extensions to the mine over this time.

Cyprus Minerals established their forum at Waikino to deal with road and other infrastructure issues at the time of mine establishment. More recently, Coer has been running a community consultative

group involving representatives from the local area to inform the community and get feedback on its operations and plans, including the closure of the mine. A planned iwi liaison group did not get off the ground.

Both Waihi Gold and Coeur have promoted themselves and their plans through shop front displays, and recently the Waihi Gold Company opened a "Martha 2000" information office on the main street to promote the mine and proposed extensions.

Both companies have attempted to be good citizens through their contributions to local community organisations and events. In the case of Waihi Gold, these contributions have been substantial. In addition both companies reported that they have a policy of purchasing goods and services locally. From local comments, it appears that Waihi Gold in particular is regarded as generous and supportive of the local community. This is reflected in a recent opinion poll conducted for the company which found that 42 per cent of Waihi residents were strongly in favour of the present mining operation and a further 28 per cent "moderately" or "a little" in favour - primarily because of the local economic benefits (Meade Rose, 1997). Only 12 per cent expressed opposition to mining - with the main disadvantages being the negative impact on the environment.

Culture, Class and Conflict

Many of the early miners at Waihi were Scots, Cornishmen, and Australians, and they brought with them a knowledge of mining and mineral processing technologies, and a willingness to tolerate a hard frontier life-style and the dangers of deep underground mining. As the town grew and the mines were acquired by British corporate interests, Waihi increasingly resembled a Victorian mill town with the community reflecting the social structures of the workplace, and the rhythms of daily life set by the mines and shift work. Both literally and metaphorically the focal point for the town was Martha Hill.

As with mine workers elsewhere they were hardworking and united in their difficult and dangerous working conditions. Leisure activities, like their work, were physical. As noted earlier, solidarity was such that the workers, in protest at high prices in the local pubs, voted the town "dry" for many years. Unofficial practises, such as the deliberate amputation of fingers or thumbs in order to gain financial compensation (for return boat fares to Britain) occurred in Waihi as in mines elsewhere in New Zealand. At the same time mining brought sophisticated industrial technologies and the provision of scientific and technical education to Waihi, enabling technical specialisation and providing opportunities for those wanting to advance in the industry. The hierarchies of the workplace were reflected in the community.

The shared conditions and hardships of the miners helped forge a strong and increasing independent miners' union centring on their hall in the main street (the site of the current Memorial Hall). The union, to which most of the mining workforce belonged, eventually joined the new Federation of Labour (known by its detractors as the "Red Feds") and openly espoused socialist ideals and the rights of the working class. Soon-to-be national political figures such as Bob Semple, Paddy Webb, Peter Fraser, and Bill Parry came to Waihi and supported the union as a major strike over working conditions unfolded in 1912. Scores of union officials and members were jailed over petty offences, and after 6 months of action, the union and the strike was violently broken by police and compliant workers sponsored by the mining company. Union supporters were driven out of the town. The strike and its breaking causing a major and lasting social rift in the town, and the previously strong sense of community was lost. As a consequence of the Waihi miners strike, the various union movements came together a year later and formed the Social Democratic Party - later renamed the New Zealand Labour Party (Roche, 1982).

According to McAra (1988) however, the camaraderie and mutual dependence that mining fosters continued among those who remained in the town and the industry, at least until mining ceased in the 1950s. At the same time the dramatic upheaval of the strike is said by some to have produced a generation of dour and inward people, loathe to speak out on local issues.

In the 1970s and 80s the town became a haven for alternative life-stylers wanting a more rural and relaxed way of life. Some of these were older people escaping from the cities and others were more transient young idealists. These new arrivals brought new values - often including a dislike for big business, materialism and constrictive social forms - as well as an interest in arts, crafts and conservation. According to some such interviewees, they slowly became accepted into the community, and Waihi benefited by becoming more tolerant of diversity, enabling, when mining recommenced in the 1980s, industry newcomers to "*just slip into the community*".

When the new round of mining began, older residents tended to argue that Waihi was essentially a mining town and accepted its destiny. Many of the alternative life-stylers moved on, and according to one informant, "*the alternative thing ended in Waihi in the mid 1980s*" when the mining companies began operating in the town. Opposition to mining was voiced by different types of residents, including some older people from the former mining days. Their main concerns were that the industry would ruin the environment, cause big costs for the community and individual residents, change the small town rural atmosphere, and generate an artificial economic boom which would eventually result in an economic and social crash as it did in the 1950s. The business and older community, and the local council however largely emphasised the potential economic gains and the desperately needed jobs. Both sets of values are observable in Waihi today and the debate over what is in the best interests of the town continues - though those in favour of the economic benefits, including the District Council, dominate

The case against gold mining was largely led in the mid 1980s by the Coromandel Watchdog organisation, the Waihi Action Group, and later, Ohinemuri Earthwatch. These "greenie" groups opposed the mining companies in their applications for resource consents and in planning hearings. Joy Storey (1997) has described the considerable local tension that built up between the pro - and anti-mining factions, including open breakdown of social courtesies and direct action against mine facilities. According to one of our local informants the debate over mining "*rekindled the old fears of speaking out in a town driven by a large mining company and local business as in the previous round of mining*".

Other informants consistently reported that many residents are "*unattached to the community*", "*don't give two hoots*", "*not interested in local issues*" or anxious to not get involved, and "*apathetic towards social development*". However, as Storey (1997) has noted, this may simply be the face of those not wanting to get involved in potentially volatile issues, and thereby avoiding escalation of community and possibly intra-family conflict. Most agree that the strident positions being voiced in the 1980s and early 90s have since been moderated. Others express that the "*atmosphere of the community has improved*" - being "*busier, more buoyant, and with more pride*". This is also consistent with the "*gung ho*" or upbeat image that the current mining industry presents.

Many of the latest new comers, while bringing skills and talents, are said to have "*city values*" and "*don't know about small town living*" - choosing not to get involved with their neighbours.

Community Organisations

Waihi has a tradition of involvement in community organisations. In the 1900s, partly because of its isolation and its relative wealth Waihi was able to boast many clubs and societies, and associated amenities. Among these were seven church congregations, 5 lodges, three brass bands, a volunteer fire brigade, operatic and dramatic societies, clubs for athletics, horse racing, cycling, boxing, golf, shooting, bowls, rugby, tennis, cricket, hockey, and croquet, a large recreation ground, swimming baths, a rugby park, several halls, a public library, and an army volunteer corps with its own drill hall capable of holding 3,000 people. As the population of the town decreased with the wind down of mining, so did the number of viable organisations, however many survived.

Fitzgerald, (1985) assembled a list of community amenities, clubs and societies in the town and district in 1984 which showed that the tradition of involvement was strong, despite the ageing population. He noted that there were at least 31 community interest organisations, 20 arts and hobby groups, and 31 sports groups covering 27 different sports - bowls, golf, rugby, netball, tennis and squash being the most popular.

More recently Storey (1997) also noted that a feature of Waihi is the large number of clubs and groups - in 1991 over 100 of them catering for the needs of Waihi, Waihi Beach and Waikino residents. Among these were new mining company sports teams, and several new organisations with an interest in mining and its development. In the late 1980s and early 90s the incoming mine workers and company people also helped swell the ranks of local sports clubs. Some report however that shift work makes it difficult for many to participate in team sports or regular programmed community activities.

A new sports stadium and gymnasium is being planned to replace the old drill hall - still in use after 90 years.

Social problems

Waihi, as with many New Zealand communities experienced an economic downturn as a result of economic restructuring in the 1980s. However this was offset to some extent by the opening of the Martha Mine, although few of the local unemployed won jobs in mining. The town was also hit badly by social welfare benefit cuts. Poverty has become an issue, with local community organisations having to provide food parcels. The former mayor of Waihi noted that poverty may be the result of unrealised expectations about employment and cheap housing in Waihi. Caravan dwelling at motor camps has grown, and there is no emergency housing in the town.

In the past 10 years Waihi has reportedly acquired a "*criminal element*", and a gang has located itself in the town. Overall there has been a decrease in reported crimes since 1984, however there has been a marked increase in petty theft particularly by juveniles. Until recently there was a Police youth aid officer based in Waihi. According to community workers, "*marijuana is easily available and dope smoking is common among youth and younger adults*".

Heavy drinking among mine workers is common, with "breakfast" and all day drinking sessions occurring at the end of 3 day shifts. One community worker informant stated that

"After being on night shifts the miners are disassociated and like zombies. They get just enough time off to recover from the boozing and work, then they are onto the day shift. They are continually exhausted. This affects their family life. Kids and partners have to learn to be quiet in the day. There is not much relief since shift workers can only join

in clubs and such activities etc on their days off. These problems are not being dealt with."

Two informants revealed that during the construction phase for the new Martha Mine

"there was a problem of drunken workers - louts - in the pubs. There was a rough element and they centred on a hotel which up until then had been a conservative, old mans, and farmers pub. The hotel became very noisy and could be heard all over town...and there were fights".

Others report that some families have also experienced stress and even break-up through having to deal with disruption and displacement by mining activities, and in some cases taking a stand against mining. Community groups are also having to deal with the stresses of increased poverty.

At the time of fieldwork, Coeur Gold was in the process of closing the Golden Cross mine, and community workers and agencies were expecting an increase in personal and family problems associated with redundancy and unemployment.

Maori

Ngati Tamatera, based in Paeroa, are the tangata whenua of the Ohinemuri /Hauraki district. At the time of fieldwork, the tangata whenua were preparing a claim for compensation for lands and resources taken by the crown in the 1800s and this century - including waterways taken for mining. Ngati Manu and Ngaiterangi from the south had coastal settlements around Waihi Beach and Bowentown. A small settlement persisted at Bowentown/Pios Beach, and in the past 15 years has been revived. No permanent Maori settlement at Waihi apparently existed in pre-European times, though the first miners were confronted by a party of Maori for desecrating Pukewa (Martha Hill), which they considered a sacred place and the site of an *urupa* (burial site).

The Maori population of Waihi has grown dramatically in recent years: between 1951 and 1981 the proportion of Maori in the population was reasonably static at around 5 to 7 per cent, but by 1996 this had risen to approximately 20 per cent. Some Maori have been attracted to the area for work in mining, and others, such as miners from Huntly, were specifically recruited. According to the mining companies, Maori are proportionately represented in their workforces.

In the 1960s, the Maori people of Waihi from mixed tribal backgrounds became recognised by the tangata whenua as Ngati Waihi, and in 1975 they acquired some of the former South Waihi School buildings and grounds for the multi-cultural Waihi Community Marae. Following a fire in the refurbished school in 1981, the community built a new marae complex. Today there is a kapahaka group at Waihi College, and a kohanga reo.

Women, young people and the elderly

Mining has traditionally been a male-dominated occupation with only administrative and secretarial employment being available for women. As a result Waihi had a historical low level of participation of females in the labour force. The situation persisted after mining ceased in the 1950s, but as manufacturing developed, factory work became available. When Phillips closed their plant in 1986, and government employment creation schemes ended, the work available to women was sharply reduced, and while the new mining industry provided needed employment, it is dominated by men. However unlike the past, women can be found in wide range of occupations and areas, such as in

professional and technical positions, in the mines and processing plants, as well as in secretarial and clerical jobs. In recent years Waihi has acquired several new day-care centres for the children of working mothers.

Like young people elsewhere, there is a lack of local jobs for school leavers - despite the mining industry. As mentioned previously, there is a problem of youth unemployment, and local training courses for the unemployed have waiting lists. Many young people leave the district for tertiary education in Hamilton, Auckland and Tauranga.

For many years, Waihi has had a high proportion of elderly people - made up of long standing residents and retirees who moved to the town. The reopening of the mines, according to Meade Rose (1997), brought more elderly people to the town to be with children or relatives employed in the industry. This created extra demand for positions in the local home for the elderly and in pensioner housing. Retirees have also generated a minor building boom. Waihi has an active Grey Power movement, with 280 members in 1997.

The Future

Waihi faces an uncertain future with its gold industry. On the one hand it is now experiencing the impact of low world gold prices through the closure of the Golden Cross mine and the progressive loss of nearly 200 hundred jobs. Job losses have also previously occurred with changes in mining contractors and mine ownership and management. On the other hand Waihi Gold are moving to extend the Martha open pit mine, creating up to 140 jobs during the peak 6 month construction period, and 35 additional operating jobs (giving a total workforce of 180). This expansion will extend the life of the mine until 2007. Over 30 households are being directly displaced by the expansion, and at the time of fieldwork, there was considerable anxiety abroad about the potential impacts on property values, the environment, and the landscape. This expansion is a double edged sword, bringing both foreseeable work and economic benefits, as well as uncertainties over the ultimate extent of mining in the town, and its impact. Some groups and individuals point to the existence of old underground workings (currently being reworked using opencast mining) which reach out under the urban area, and others refer to the company's prospecting and recent announcements that it has located what seems viable ore reserves in other parts of the town. However no long term plans beyond the proposed extension to the Martha pit have been revealed. At present gold prices, underground mining below the bottom of the open pit is unlikely to happen, but as shown earlier, gold prices are subject to considerable fluctuation. The future therefore depends on the gold price - if it rises, the mining companies are certain to attempt further expansion; if it falls, Waihi may see a sudden closure of the mine.

The District Council and others recognise that, at least under present plans, gold mining at Waihi has a limited life. Accordingly, as in the past, efforts have been mounted to diversify the economy. These include an ongoing attempt to develop tourism based on the public's fascination with the local gold mining heritage and current operations, and its position at the gateway to the Coromandel Peninsula. With regard to mining heritage, the development of the Waihi Museum, and the Goldfields Railway between Waihi and Waikino, with its associated Karangahake Walkway (which takes in the remains of the Victoria Battery at Waikino), are held up as successes. Some consider there is still potential for further development of points of interest at Waihi and Waikino. Others, including the mining company, claim that the current open pit mine when abandoned and allowed to fill as a lake, will be an attraction, and add to the gold mining heritage of Waihi.

Local development initiatives, aimed at building a sustainable and diverse local economy beyond mining are underway following a series of local visioning and planning exercises conducted by the

Community Employment Group and the Hauraki Enterprise Agency on behalf of the Community Board. A “Go Waihi” campaign has been initiated with the goal of having “a vibrant town that builds pride and strength for future economic growth and stability and promotes community spirit” (Go Waihi Committee, 1996). The aim is to co-ordinate promotion and development, including improving the appearance and image of the town, and to foster local enterprise. Central to this is Waihi’s mining heritage. This campaign has received a grant from central government, and additional funding is coming from a voluntary levy of \$300 on each of the 102 local CBD businesses. A paid co-ordinator has been appointed. According to one of the organisers, as at the end of 1997, the District Council had made no financial contribution to “Go Waihi”.

After the current round of mining, as one long standing resident who had seen Waihi survive and develop after the end of the first round in 1952 put it

“Waihi will box on with tourism, as a farming service town, and a small centre for small industry, and the present mine will eventually become a centre of historical interest”.

CONCLUSION

For over 85 of the 110 or so years of its life, Waihi has lived for and with gold mining’s ups and downs, environmental and social effects, and uncertainties. Mining has also meant great wealth for foreign companies, incomes and hard work for the many who came there, conflict, and the struggle to build and sustain a community - one that has never been wealthy despite the rich mineral resource that lay on its doorstep. For 35 years, from the 1950s to mid 1980s, however the town took on the mantle of a quiet rural service centre, attracting those seeking a less pressured life-style or a place to retire cheaply. But it was far from immune to the impacts of central government and corporate economic policy, and in the 1980s, escalating gold prices brought the return of the mining companies, along with a rural and manufacturing downturn. In the face of further, short-term fluctuations from mining, diversification of the economy remains a key strategic task.

When mining returned, it was to a more diverse and better equipped community, yet one that was happy to see itself as a mining town and in need of the economic benefits that digging out the remaining gold and silver promised. In accepting the new round of mining and its workers, the community has also encountered the same uncertainties and disruptions to life and landscape. Some argue that Waihi has become too dependent on mining and too willing to attribute all good things to the return of the industry; others are willing to take the benefits and move on to new fields when the time comes, and yet others are looking beyond mining, but uncertain when the miners will again pick up their tools and walk away.

REFERENCES

- Barber, Laurie. 1985. *No Easy Riches: A history of Ohinemuri County, Paeroa and Waihi 1885-1985*; Ohinemuri County Council/Ray Richards Publisher; Paeroa.
- Campbell, L.A. and H.A. 1998. *Waikato: the grass roots*. Kiwi Web, www.chemistry.co.nz.
- Climie, Nellie Scott (ed.) 1962. *The Waihi Borough Celebrates its Diamond Jubilee with the Story of NZ's Greatest Goldfield, its Pioneer Families and its Resurgent New Life*. Waihi Borough Council; Waihi
- Cyprus Minerals New Zealand Ltd. 1987. *Golden Cross Project Environmental Impact Report*. Waihi.
- Donnelly, Felix. 1982. *One Priest's Life*. Australia and New Zealand Book Company, Auckland.
- Fitzgerald, Gerard. 1985. *Martha Hill Project Social Impact Assessment Report*. Unpublished report for Waihi Gold Company, Nelson.
- Go Waihi Committee, 1996. *Strategic Plan*. Go Waihi Committee, Waihi.
- Greenhaigh, John. 1989. *Waihi Borough Council 1902 - 1989: winds of change*. Waihi Borough Council, Waihi.
- Hauraki District Council. 1997. *Draft Strategic Directions*. Hauraki District Council, Paeroa.
- McAra, J. B.1988. *Gold Mining at Waihi: 1878-1952* (Revised Edition); Martha Press; Waihi
- McClintock, Wayne. 1997. *Profiles of Forestry, Mining, and Agriculture-based Communities: working paper in Resource Community Formation and Change*. Taylor Baines & Associates, Christchurch.
- Mcmanus, Jenni. 1993. "Coeur d'Alene pays \$60m for Golden Cross". *The Independent*, 7 May 1993.
- Meade Rose, Julie. 1997. *Waihi Gold Company Martha Mine Extended Project: assessment of social effects*. Julie Meade Rose & Associates, Ototohanga.
- Morton, Norman. 1962. "Civic development". in Climie, 1962, p17-25
- Normandy Mining Ltd. 1997. *Normandy Mining Ltd*. Internet documents. <http://www.normandy.community.au/contents>.
- Otter Gold, 1997. *1997 Annual Report*. Internet document <http://www.ottergold.com.au/annual.htm>.
- Parata, Suzanne. 1997. "No immediate threat to Waihi DML workers". *Waihi Leader*, 11 November, 1997.
- Roche, Stanley. 1982. *The Red and the Gold: An informal account of the Waihi Strike, 1912*; Oxford University Press; Auckland.

- Silcock, Robin (ed.). 1990; *The Martha Mine: a brief history of the Martha Hill Mine in Waihi*. Waihi Gold Mining Company, Waihi.
- Sleeman, C.G. and Bell, R.P. 1962. "The Waihi Mine". In Climie (ed), 1962, p 37-71.
- Statistics New Zealand 1997. *New Zealand Official Yearbook 1997*. GP Publications; Wellington.
- Storey, Joy. 1997. "Martha Mine, Waihi: A Case Study of Community Conflict". In Claudia Bell (ed.) *Community Issues in New Zealand*. The Dunmore Press; Palmerston North. pp.101-116
- Swinton, D.E., 1962; "Waihi today". In Climie (ed), 1962, p151-158.
- Anon, 1998. "Gold and Silver Comparison". Internet document from *The Privateer Market Letter*: <http://www.the-privateer.com/> .
- Waihi Gold Company. 1985. *Martha Hill Project Environmental Impact Report Volume III*. Waihi Gold Company, Waihi.
- Waihi Gold Company. 1997. *Extended Project Description*. Waihi Gold Company, Waihi.
- Waihi Gold Company. 1997. *Martha Mine Extended Assessment of Environmental Effects*. Waihi Gold Company, Waihi.
- Weston, Richard, 1995. Unpublished notes in a presentation given to visitors to Golden Cross Mine, 13 March 1995. Coeur Gold, Waitekauri.
- Wheeler, Brent. 1997. *The Economic Impact of the Proposed Martha Mine Extension: in respect of an application for a resource consent*. Waihi Gold Company. 1997
- Wheeler Campbell Securities Ltd. 1994. *The Impact of Gold and Silver Mining on the New Zealand Economy: report prepared for the Ministry of Commerce*. Wheeler Campbell Securities, Wellington.
- Young, R.P. 1997. *Martha Mine Extension: assessment of effects on property values*. Robertson Young Telfer, Auckland.