



Health and Safety in NZ extractives



A briefing to the incoming Ministers on the extractives sector and health and safety

November 2020

INTRODUCTION

MinEx is the national Health and Safety Council for New Zealand's extractive sector – the mining, quarrying and tunnelling industry. We have prepared this paper as an introduction to the extractives sector for Ministers, MPs and officials, to outline issues with health and safety regulations and other issues which need addressing in the next term of Parliament and to encourage the dialogue between industry and Government necessary for positive outcomes.

MINEX

Our principal purpose is to help the extractive industry achieve its goal of being free from fatalities, injuries and occupational diseases.

MinEx is funded by the quarrying and mining industry – through the respective industry associations a number of individual companies – with a mandate to:

- be the main point of contact with officials on all extractives sector matters related to health and safety, and
- through leadership and consultation, develop an industry view on relevant legislation, regulations, guidelines and training matters, and work with WorkSafe and other agencies to adopt and implement those views

An important aspect of this mandate is that MinEx works in the interests of the industry as a whole, and not in the interests of individual members.

MinEx is governed by a Board, with appointees from:

- Aggregate and Quarry Association of New Zealand (AQA), representing quarry sector companies
- Australasian Institute of Mining and Metallurgy NZ Branch (AusIMM), representing mining sector professionals
- Civil Contractors New Zealand, representing contractors across all sectors, including tunnelling
- E tū, representing extractives sector workers
- Institute of Quarrying New Zealand (IOQ), representing quarry sector professionals
- Straterra, representing mining and mineral sector companies

MinEx operates out of the Straterra office in Wellington. MinEx is staffed by a full time Chief Executive, supported by policy, communications and office administration resources.

As the mandated extractives Health and Safety Council, MinEx seeks early engagement with Government agencies and officials – and where necessary Ministers – on policy and operational developments. Through early engagement, MinEx can provide technical information and industry knowledge and viewpoints to officials to inform policy decisions, and thus represent the sector in the shaping of policy.



Frasers Underground gold mine, operated by OceanaGold at Macraes Flat near Ranfurly, Otago



Taotaoroa Quarry near Cambridge

SNAPSHOT OF THE NEW ZEALAND EXTRACTIVES SECTOR

The extractives sector – quarrying and mining – is fundamental to the New Zealand economy and modern way of life. It contributed around \$2.59 bn (in 2019 prices) to New Zealand’s economy in the year ending March 2019¹. Because minerals and aggregates are essential to many aspects of life and to our economy, the discussion should not revolve around *whether or not* to mine or extract, but focus on *how* to mine or extract in a way that is environmentally responsible and safe for workers.

More than 5,000 people are directly employed in the mining and quarrying sector, including 250 in tunnelling projects. The number working in tunnelling is expected to increase substantially over the coming years due to major tunnelling projects in Auckland. In 2018, average earnings across the mining and quarrying sector were \$98,500 pa, compared to \$59,100 pa for the national economy.

The productivity of employment in the sector tells a similar story. In 2019, GDP per full-time equivalent (FTE) employee was more than \$537,000 compared to less than \$130,000 across the New Zealand economy. Thus, labour productivity in mining and quarrying is more than four times higher than the national average.

Quarrying

Every built thing sits on aggregate (crushed rock and stone) sourced from quarries or riverbeds; not a single home, factory, farm building, school, hospital, airport or road can be built without aggregate. This is sourced from as many as 1,100 quarries and crushing sites which are located from Te Hāpua to Bluff and in the Chatham Islands.

A wide range of industrial minerals are produced in New Zealand, including clay, limestone and dolomite (essential to farming productivity), perlite, halloysite, bentonite, zeolite, silica and serpentine.

Although the majority of aggregate comes from sites registered with Government agencies, many small producers fly under the radar, presenting particular health and safety risks.

A particular challenge faced by the quarry sector and end-users is maintaining urban and urban-fringe quarries. As quarries are forced to locate further from their markets, the cost of aggregate rapidly increases, as do emissions from transport.

¹ *Environmental Scan of the New Zealand Mining and Quarrying Sector*, Infometrics September 2020.

Mining

The New Zealand mining sector includes extraction and processing of the following minerals:

- **Hard-rock and alluvial metalliferous** – OceanaGold has hard-rock metalliferous operations at Waihi and East Otago, both of which include surface and underground operations. Other operators run a number of alluvial gold mines, mainly on the West Coast, Otago and in the Southland. Hard-rock gold contains gold in the rock itself and mines resemble typical quarries, whereas alluvial gold is loose and is often mined in water using diggers and floating plant.
- **Ironsands** – ironsand is mined near the coast at the Waikato North Head mine and Taharoa mine, which is used for iron and steel production at New Zealand Steel's Glenbrook steel mill, and also for direct export.
- **Coal** – open cut coal is mined in the Waikato, Southland, Canterbury and the West Coast. This is used for thermal generation and industrial heat processes such as milk powder factories, and high-grade West Coast coking coal is also exported for essential use in steel production. There are no underground coal mines currently operating in New Zealand.

Tunnels for infrastructure (e.g. road, rail, water treatment) are considered mining operations for the purpose of New Zealand mining regulations.

NATURE OF RISKS AT QUARRIES AND MINES

Quarries and mines are high-hazard workplaces. This is demonstrated by the range of principal hazards, which can cause multiple fatalities and which require careful management, fit for purpose regulations, not laissez-faire or ill-defined regulations. The most chilling example of regulatory failure was the Pike River coal mine methane explosion which claimed 29 lives in New Zealand's single worst workplace disaster in recent memory. Since the Pike River tragedy in 2010, there have been nine fatalities in the extractives sector.

Methane is a principal hazard in underground coal mines – but there are no such mines operating in New Zealand at present. Underground gold mining occurs at Waihi and Macraes Flat – these and tunnelling operations have similar hazards.

Quarries and mines are technically specialised and diverse operations, often situated in remote locations. All quarries and most mines are surface operations and they have broadly similar hazards.

MinEx is very firmly of the view that the different nature of hazards and associated risks at extractives operations warrant separate and specific regulations to ensure these hazards and risks are managed appropriately. Many quarries, and some open cut metalliferous mines, are small (with just two or three workers) and on small footprints. The hazards and risks here, although similar in nature to all mines, require different controls and monitoring to large open cut operations employing large numbers of workers.



Macrae's opencast mining operation.

MINEX'S VIEWS AND RECOMMENDATIONS ABOUT THE CURRENT REGULATORY REGIME

The Health and Safety at Work Act 2015

MinEx is supportive of the primary legislation – the Health and Safety at Work Act 2015 (“the Act”). It is a modern Act which establishes a strong framework for achieving sound health and safety outcomes. MinEx does not seek major changes to the Act, but we consider clarifying the definition of a quarry and other minor administrative changes would enhance the Act.

Implementing a regulatory regime for quarries and alluvial operations Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016

In response to the *Royal Commission into the Pike River Mine Tragedy*, the Government introduced the Health and Safety in Employment (Mining Operations and Quarrying Operations) Regulations 2013 (“the Regulations”). These regulations applied to the underground and opencast sectors, but did not apply to quarries, mineral sands, and alluvial gold operations except for a regulation prescribing requirements for Certificates of Competence (CoC) for specified safety-critical roles.

An implementation review of the Regulations was promised in 2013, as an acknowledgement that the scale and urgency of regulatory reform meant that their design had been more rushed than was optimal. There was only minimal change to adapt the Regulations to the new Health and Safety at Work Act framework when these were carried over in 2016. MBIE completed the implementation review in early 2019. Its scope was to:

- consider whether the quarry and alluvial mining sectors needed further hazard management requirements in the Regulations, and
- test whether the Regulations were working effectively in operation.

Cabinet approved the *Health and Safety in Mines and Quarries – Proposed Regulatory Changes* in December 2019. Regretably, to date, neither MinEx nor the extractive industry has seen an exposure draft of the proposed changes as promised, and we now seem unlikely to see the drafted regulations until early 2021.

The extractives industry has become increasingly frustrated at the continual delays in this process.

New regulations were initially promised in 2013 and now some 7 years later, and 10 years after the Pike River disaster, these remain unresolved. In February 2018, the then Minister for Workplace Relations, Iain Lees-Galloway, stated that “changes to the Regulations would be in place by Christmas 2018”.

As stated in the December 2019 Cabinet paper, and repeatedly requested by the extractives sector, the quarry and alluvial sectors would benefit from greater health and safety management.



MINEX'S VIEWS AND RECOMMENDATIONS ABOUT THE CERTIFICATES OF COMPETENCE (COC) REGIME FOR THE EXTRACTIVES SECTOR

Three main agencies are relevant to the regulatory regime covering extractives health and safety.

1. The Ministry of Business, Innovation and Employment administers the Mining Regulations which specify the roles requiring CoCs.
2. MITO is the industry training organisation which develops the unit standards, soon to be replaced by the Manufacturing, Engineering, Logistics and Technology (MELT) Workforce Development Council.
3. WorkSafe's Board of Examiners specifies the unit standard requirements for each CoC and also assesses the applications.

It is crucial that the training and CoC requirements set out in regulation align with the obligations and responsibilities rightly imposed by the Act. The legislation requires personnel in safety-critical roles to:

- develop, implement and maintain a health and safety management system;
- develop and implement risk management processes including identification of fatal/principal hazards;
- develop and implement an emergency management control plan;
- train workers and assess their competence;
- investigate incidents/accidents;
- communicate and consult with workers; and
- supervise workers.

In general, however, the current CoC requirements, and indeed those put forward in WorkSafe's *Proposed requirements for granting Extractives Certificates of Competence* (August 2017), do not address the skills, knowledge and experience required for the safety-critical roles defined in Part 2 of the 2016 Mining Regulations.

To provide training which meets the obligations of the Act, MinEx proposes that NZQA certificate and diploma qualifications replace the current *ad hoc* group of unit standards required of Certificates of Competence covering safety-critical roles.

The key benefits of a recognised formal qualification would be to:

- improve health and safety outcomes by having better trained managers;
- provide new entrants to the industry with a pathway for improving skills and knowledge;
- establish transferrable qualifications (through overseas mutual recognition arrangements); and
- improve the credibility of the sector through greater professionalism.

To help achieve this, MinEx established a small Industry Training Advisory Group to work with WorkSafe and MITO to develop an appropriate framework aligning CoCs with NZQA qualifications. A formal submission to WorkSafe on proposed changes to CoCs was made in September 2017. However, this process was put on hold pending changes to the Regulations mentioned above. So the major delay in new regulations for the quarrying sector is now compounding.



Renwick Quarry, processing river-sourced stone, Marlborough

THE WORKSAFE INSPECTORATE

Quarries and mines should continue to be treated as high-hazard workplaces and managed by specialist mining inspectors from the High Hazards Unit (HHU) of WorkSafe, due to the complex requirements for health and safety at these sites. The specialist inspectorate was established following the recommendations made by the Pike River Royal Commission.

It is impossible however, for the 8 current high hazard inspectors to adequately regulate 102 mines, 5 tunnelling projects, and 1,156 quarries² spread across the country. Such low resourcing for WorkSafe's High Hazards Unit means any one of New Zealand's 1,200+ operating extractives sites may only be visited once every several years.

We would hope that the incoming Government views health and safety as a significant funding priority. We believe in a collaborative approach to improving health and safety, involving the regulator, unions and industry, however this model can only work with an adequately funded and resourced regulator.

² *Extractives Industry Quarterly Report, WorkSafe March 2020*

HEALTH & SAFETY AT SMALL MINES AND QUARRIES

Many quarries, and some open cut metalliferous mines, are small (with just two or three workers) and are on small footprints in remote and/or isolated locations. The hazards and risks here, although similar in nature to all mines, require different controls and monitoring to large open cut operations employing large numbers of workers.

Without implementing a Health and Safety Management System (HSMS) based on risk management principles, small mines and quarries generally have not effectively identified site hazards, developed solutions, nor managed hazards through procedures, rules and other controls which could otherwise have become the default prescription under the current duty-based or performance-based legislation.

MinEx has identified this gap and currently facilitates, with WorkSafe, a series of regional workshops to provide awareness and assist small mines and quarries with development and implementation of HSMS. While this training continues to be very beneficial, a large number of these attendees require mentoring and site-based assistance to implement the learnings from the workshops and to develop and implement workplace systems particularly for risk management techniques, safety meetings, safe work procedures and worker health plans.

Extractive industry associations MinEx, Straterra and the Aggregate and Quarry Association, together with E tū and First Union, support a model similar to that of the Australian Mining Industry Worker H&S Representative and the Toroawhi Pilot being carried out jointly by WorkSafe and the Forest Industry Safety Council, where Government funds a Small Mines H&S Advisor to work with workers and managers on the ground to improve worker engagement, worker health and risk management at small mines and quarries.

The NZ Mines Rescue Service

Following recommendations made by the Pike River Royal Commission, the Mines Rescue Act 2013 was reviewed. Regulations were introduced for the purpose of setting a risk based levy structure to ensure adequate capacity and readiness to respond to mining and tunnel operation emergencies. A particular objective of the NZ Mines Rescue Service was to provide for an effective and co-ordinated response in the event of an emergency at all underground operations and to many open cast coal mines.

Although there are now no underground coal operations currently operating in New Zealand, the Mines Rescue Service does provide support and secondary response to two underground gold mines, tunnels under construction or being modified, and to operational tunnels including road and rail tunnels throughout New Zealand where long duration breathing apparatus sets are required. This capability sees the NZ Mines Rescue Service called out to supply support when necessary, including training for the Whakaari White Island recovery operation.

The Mines Rescue Service has no financial support from any operational tunnels and with fewer levy-payers overall (due to the closure of underground coal mines), the levies on individual companies have had to increase as well as the NZ Mines Rescue Service undertaking commercial training.

It is timely therefore that a review of the Mines Rescue Act and Regulations be carried out in conjunction with Fire & Emergency New Zealand and then with an industry, worker, Government and Mines Rescue Service working group to finalise the details.

MINEX'S RECOMMENDATIONS TO GOVERNMENT

To maintain and improve health and safety outcomes and to ensure these are achieved without unnecessary regulatory obligations, we recommend the following six main actions to Government:

RECOMMENDATION ONE: The revised **Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016**, as approved by Cabinet in December 2019, be implemented promptly following a review of the exposure draft by MBIE, WorkSafe and MinEx.

RECOMMENDATION TWO: Reform the regime for **Certificates of Competence to align requirements with obligations under health and safety legislation**, and make the associated changes to regulations.

RECOMMENDATION THREE: Retain and increase specialist inspectors and provide appropriate funding to ensure the effectiveness of the **High Hazard Unit**. The extractives sector is happy to discuss alternative funding models for WorkSafe.

RECOMMENDATION FOUR: Fund a **Small Mines H&S Advisor who will visit sites following their attendance at regional workshops and provide mentoring and assistance with developing and implementing site safety systems**. The H&S Advisor will be accommodated and managed by MinEx and work collaboratively with WorkSafe, unions and employers to provide H&S outcomes for workers in small extractives operations in a similar way to the successful Toroawhi Pilot in forestry.

RECOMMENDATION FIVE: Engage MinEx early in the stages of extractives policy development to draw on a mandated industry view to achieve better health and safety outcomes.

RECOMMENDATION SIX: Establish an industry, NZ Mines Rescue Service and Government group to review the Mines Rescue Trust, purpose and funding, following a review conducted by NZ Mines Rescue Service and Fire Emergency New Zealand with input from the Police.





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