

MinEx



A briefing on the extractives sector and health and safety

November 2017

INTRODUCTION

MinEx has prepared this paper as an introduction to the extractives sector for parliamentarians and officials, to encourage the dialogue between industry and government necessary for good outcomes, and to outline issues with health and safety regulations.

MINEX

MinEx is the national health and safety council for New Zealand's extractive sector – the mining and quarry industry. Our principal purpose is to help the industry achieve its goal of being free from fatalities, injuries and diseases.

MinEx is funded by the quarrying and mining industry – through the respective industry associations and 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
- 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:

- Aggregates and Quarry Association of New Zealand, representing quarry sector companies;

- Australasian Institute of Mining and Metallurgy (NZ Branch), representing mining sector professionals;
- Civil Contractors New Zealand, representing contractors across all sectors, including tunnelling;
- E tū, the union representing extractives sector workers;
- Institute of Quarrying New Zealand, representing quarry sector professionals;
- Straterra, representing mining 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. MinEx can provide technical information to officials to inform policy decisions, and can represent the sector in the shaping of policy.



Frasers Underground Mine

SNAPSHOT OF THE NEW ZEALAND QUARRYING AND MINING SECTORS

The extractives sector – quarrying and mining – is fundamental to the New Zealand economy and modern way of life. Because minerals and aggregates are essential, the discussion should not revolve around *whether or not* to mine or extract, but should rather focus on *how* to mine or extract in a way that is environmentally responsible and safe for workers.

Some 4,140 people are employed in the mining and exploration sector (with several thousand also employed in quarries), earning on average \$102,100 a year, almost twice the national average wage¹. The mining, quarrying and petroleum industry has the highest labour productivity of any sector in New Zealand, at \$333 per hour worked².

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 800 quarries and crushing sites which are located from Te Hapua to Bluff.

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

Although the majority of aggregate comes from sites registered with government agencies, many small producers fly under the radar, presenting 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 transport emissions.

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 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, and the West Coast. This is used for thermal generation and industrial processes, 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 and rail) are considered mining operations for the purpose of New Zealand mining regulations.

¹ Mining and Exploration 2016 Sector Profile (2017). Infometrics.

² Petroleum and Minerals Sector Report (2013) Ministry of Business, Innovation and Employment. Note that despite the restricted title, this report includes the quarry and aggregate sector.

Health and safety

The Pike River tragedy was the catalyst for the implementation of the Health and Safety in Employment (Mining Operations and Quarrying Operations) Regulations 2013. Subsequently, the Health and Safety at Work Act 2015 addressed general workplace safety across New Zealand.

Although MinEx considers that the Health and Safety at Work Act is sound and fit for purpose legislation, changes to the mining and quarry specific regulations that sit under the Act are necessary.



Globe Progress Mine

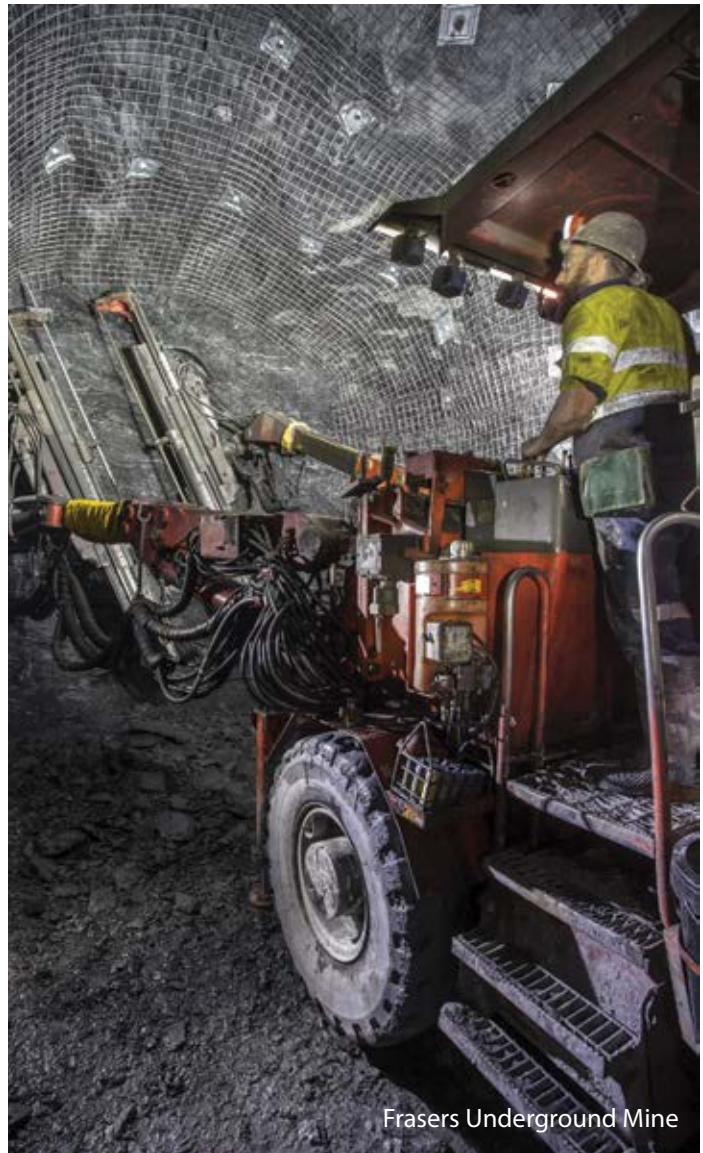
NATURE OF RISKS AT QUARRIES AND MINES

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 and fit for purpose regulation. The most obvious example was the Pike River coal mine methane explosion which claimed 29 lives in New Zealand's worst single workplace disaster in recent memory. Since the Pike River tragedy in 2010, there have been eight fatalities in the extractives sector.

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

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.

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.



Frasers Underground Mine

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. It is a modern Act which establishes a strong framework for achieving sound health and safety outcomes. MinEx does not seek changes to the Act, but as is presented in this briefing, we consider that secondary legislation – the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016 – do require improvement.

Developing 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. 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 for specified safety-critical roles.

The 2013 Regulations were developed and implemented in a very short time frame, with consultation commencing in May 2013 and the regulations in force in December 2013. This was

by agreement between Government and industry in consideration of the particular circumstances following the Pike River tragedy and the Pike River Royal Commission. Inevitably there were a number of flaws in the regulations resulting from the short preparation time.

The extractives industry understood from the regulation-development process and discussion with government officials that two things would subsequently happen, namely that:

- 1) the regulations would require revision to correct any issues arising from the short policy process, and
- 2) the quarry and alluvial gold sectors would be covered by regulations in a subsequent policy process.

These two things, however, did not occur when the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016 came into force, thereby replacing the 2013 Regulations. These amendments dealt to a few minor errors but were mostly associated with the new Health and Safety at Work Act 2015, which came into force in April 2016.

The quarry and alluvial gold sectors would benefit from greater health and safety management. However, because the current 2016 regulations are not appropriate for these sectors (and hence excluded from them), a separate set of regulations and/or an Approved Code of Practice is required.



Lake Ianthe Alluvial Gold Mine

General review of the regulations

To incorporate lessons since the Mining Regulations came into force, MinEx recommends a general review for workability. Particular issues MinEx would like to see resolved relate to:

- **The current application of electrical and mechanical control plans to open cut mines** – these regulations were developed for underground coal mines and are not appropriate for surface open cast operations.
- **Coal exploration currently requiring a Certificate of Competence (“CoC”) holder** – this requirement is excessive given the short duration of exploration, and the nature of hazards and risks at exploration sites.
- **The definition of a quarrying operation** – the current definition includes all general earthworks regardless of whether processing occurs, which is overly restrictive and presumably unintended.
- **Escapeway requirements in metalliferous mines** – following the Pike River tragedy, new escapeway requirements were included, which provided coal mines with a transitional period to 2024 but which came into force immediately for metalliferous mines. This was apparently unintended and in fact requires actions that are not best practice in underground metalliferous operations and do not improve health and safety outcomes.
- **The definition of mining operation and suspension of mining** – the definition means that mines in a state of care and maintenance are considered to be mining operations and require CoC holders, even though the work will not involve principal hazards. Similar to the issue covered above on coal exploration, this would appear excessive.

MinEx’s views and recommendations about the Certificates of Competence 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.
3. WorkSafe’s Board of Examiners specifies the unit standard requirements for each CoC, and also assesses CoC applications.

It is crucial that the training and CoC requirements set out in regulation align with the obligations and responsibilities rightly imposed by the Health and Safety at Work Act 2015. 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 that 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 CoCs covering safety-critical roles.

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 has established a small Industry Training Advisory Group to develop, with WorkSafe and MITO, an appropriate framework aligning CoCs with NZQA qualifications.

MinEx’s formal submission to WorkSafe on proposed changes to CoCs in September 2017 outlines further details of this proposal.

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 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. However, to further improve regulatory oversight, we consider WorkSafe should recruit suitably qualified inspectors to promote and regulate health and safety for mining, tunnelling and quarrying operations.

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 operations 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 OceanaGold’s two underground gold mines, tunnels under construction or being modified, and to operational tunnels including road and rail tunnels.

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

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.



Imreys Clay Mine

MINEX'S RECOMMENDED POLICIES FOR GOVERNMENT

To maintain and improve health and safety outcomes, and to ensure these are achieved without unnecessary regulatory obligations, we recommend the following five main actions to government.

RECOMMENDATION ONE: Review the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016, with close involvement from MinEx. In doing, so, Government should aim to:

- 1) **Develop a framework to better manage health and safety in quarries and alluvial gold mines**, either through separate regulations or through an Approved Code of Practice notified in the New Zealand Gazette. As part of this, and to promote fit for purpose health and safety, it would be appropriate to develop a new Certificate of Competence for alluvial gold mine managers;
- 2) **Conduct a general review of the regulations**, focusing on workability issues, particularly to:
 - a. **Revise current application of electrical and mechanical control plans to open cut mines** so they are appropriate for open-cut operations.
 - b. **Reform the Certificate of Competence requirements for coal exploration**, due to being out of proportion to the risk profile.
 - c. **Amend the definition of a quarrying operation** so it applies to genuine quarries with the relevant hazards, and not to all earthworks.
 - d. **Revise escapeways requirements in metalliferous mines**; to address transitional and other issues.
 - e. **Revise the definition of mining operation and suspension of mining** so that work with no principal hazards does not require a Certificate of Competence.

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 specialist inspectors, and provide fit for purpose capability for underground metalliferous mines.

RECOMMENDATION FOUR: 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 FIVE: Establish an industry, NZ Mines Rescue Service and government group to review the Mines Rescue Trust structure, purpose and funding, following the review currently being conducted by NZ Mines Rescue Service and Fire Emergency New Zealand.





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